REPORT RESUMES

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THE ACADEMIC STATE, A PROGRESS REPORT TO THE LEGISLATURE ON TUITION AND OTHER MATTERS PERTAINING TO HIGHER EDUCATION IN CALIFORNIA.

JOINT COMMITTEE ON HIGHER EDUCATION

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THIS PROGRESS REPORT ON CALIFORNIA'S PUBLIC HIGHER EDUCATION COVERS MATERIAL ON ITS SCOPE AND PURPOSE, EDUCATIONAL OPPORTUNITY, AID TO PRIVATE SCHOOLS, AND OTHER MATTERS PERTINENT TO THE PENDING DECISION ON A TUITION FEE. IN OBJECTING TO THE FEE, THE COMMITTEE FEELS THAT (1) SUCH AN ADDED COST, BEYOND FUNDS PROVIDED BY THE STATE'S GENERAL FUND, MAY DIVERT OR DISCOURAGE ENROLLMENT, (2) NEW OR EXPANDED PROGRAMS CAN BE OTHERWISE FUNDED, (3) REDUCING PUBLIC SUBSIDY OF THE IMMEDIATE BENEFICIARY BURDENS HIM AND HIS FAMILY UNDULY (UNLESS HE MAY MAKE DEFERRED PAYMENTS), (4) CONSIDERING FOREGONE EARNINGS, THE STUDENT'S EXPENSES ARE ALREADY HIGH, AND (5) ALTERNATIVE REVENUE SOURCES CAN BE EXAMINED, E.G., WITHHELD INCOME TAX, ADDITIONAL GIFTS AND GRANTS, IMMEDIATE USE OF ENDOWMENT INCOME, AND INCREASED FEES FOR CONTRACTS AND SERVICES. DISSENTING MEMBERS OF THE 10-MAN COMMITTEE POINT OUT, AMONG OTHER THINGS, THAT (1) THE STUDENT, AS PRINCIPAL BENEFICIARY, SHOULD REDUCE THE LOAD OF THE TAXPAYER, (2) SUCH A FEE WOULD ENCOURAGE THE STUDENT'S SENSE OF RESPONSIBILITY, (3) THE SCHOOLS, IF FINANCIALLY MORE DIRECTLY DEPENDENT ON THE STUDENTS AND PARENTS, WOULD BE MORE RESPONSIVE TO THEIR WISHES, AND (4) A GRADUATED FEE SCHEDULE COULD SPREAD THE COST ACCORDING TO ABILITY TO PAY. THE REPORT DISCUSSES OTHER ASPECTS OF THE PROBLEM AND PRESENTS CHARTS AND TABLES ON MASTER PLAN PROJECTIONS THROUGH 1972. (HH)

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THE ACADEMIC STATE

*A Progress Report to the Legislature
on Tuition and Other Matters
Pertaining to Higher Education
in California*

by the

JOINT COMMITTEE ON HIGHER EDUCATION

JC 680 184

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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JOINT COMMITTEE ON HIGHER EDUCATION

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Letter of Transmittal

Honorable Robert H. Finch, President
and Members of the Senate
State Capitol
Sacramento, California

Members of the Assembly
State Capitol
Sacramento, California

Ladies and Gentlemen:

The Joint Committee on Higher Education transmits herewith a progress report on tuition and other matters pertaining to higher education in California in compliance with ACR 16, 1967 Regular Session, and ACR 56, 1966 First Extraordinary Session.

The Committee's final report to the Legislature will be submitted to the 1969 Session.

Respectfully submitted,
JESSE M. UNRUH
Chairman

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ALBERT S. RODDA	WINFIELD SHOEMAKER
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*Concur with exceptions. Statements of dissent regarding the Committee's preliminary findings are included at the end of the report.

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Summary of Preliminary Findings

It has not been the intention of the Joint Committee on Higher Education to present final recommendations to the Legislature prior to completion of its studies and submission of its report to the 1969 Session. The close interrelationships of the matters under study as well as the necessity for developing a strong factual base for its recommendations have made this policy mandatory.

However, the Committee was specifically directed by ACR 16 of the 1967 Session to report to the Legislature at the 1968 Session on the matter of tuition for California's public institutions of higher education. To put this matter in its proper context the Committee has decided to submit, in addition, certain preliminary material on the general scope and character of higher education in California and to advance several preliminary findings regarding educational opportunity, aid to private institutions and the structure of the public system of higher education.

It is hoped and intended that these preliminary findings, as well as the material presented in the body of this report, will stimulate discussion and criticism by others which will assist the Committee in its continuing study of these matters.

Tuition

The Committee submits the following findings regarding tuition for California's public institutions of higher education:

1. The principal purpose of any decision to impose tuition or a comparable increase in other student charges must be to raise additional funds for the current support of public higher education, in addition to or in partial substitution for what would otherwise be available from the state's General Fund. Tuition as a means to divert students from one institution or system to another, to weed out students who lack sufficient motivation, to aid the private colleges and universities, to punish students for campus disorders or to otherwise ration educational opportunities cannot be justified and should be opposed by the Legislature.

2. A desire to initiate a new expenditure program or to expand an existing program cannot be used as sole justification for a specific revenue-raising device. Any new or expanded expenditure program, including increased expenditures for student aid, faculty salaries or other purposes, may be funded from any one of several different sources. Each program must be analyzed and accepted or rejected on its own merits, not simply because of the manner in which it is to be financed initially. The imposition of tuition may require additional student aid, but additional student aid is not dependent upon the imposition of tuition.

3. The most persuasive argument for tuition is as a user charge to reduce or eliminate the public subsidy to those who attend public colleges. This subsidy results in a flow of benefits which includes, on the average, higher lifetime earnings as well as other, nonmonetary satisfactions. However, if tuition is imposed to reduce the subsidy, it is important to provide for some system of deferred payment so that the burden of tuition falls upon the future income of the students who receive the subsidy rather than upon the current income of their parents.

4. There is evidence to indicate that a suddent large increase in student aid funds would not immediately attract a large number of new students. Nevertheless, it must be kept in mind that a large-scale student aid program coupled to tuition, if effective in attracting or retaining large numbers of students who do not now attend or stay in college, could result in a net increase rather than a decrease in support and capital outlay costs to the General Fund.

5. There is no convincing evidence for the proposition that under the present state tax structure low-income groups support a disproportionate share of the cost of higher education.

6. It is well known that the public cost of providing higher education has become very large, whether measured in absolute dollars or as a percentage of the General Fund. It is less well known that the "private" costs to students and their parents are now very substantial also, whether measured by the direct "out-of-pocket" expenses or by the sum of the incremental costs of attending college and foregone earnings.

7. There are several important potential alternatives to tuition as sources of additional revenue. Among these are state income tax withholding, additional private gifts and grants, increased use of present endowment funds (and funds used as endowments) and increased charges for contract research and other public services. Each of these alternatives merits careful exploration.

In view of these facts, the Committee finds that under present circumstances the arguments offered for tuition are of insufficient relevance and merit to justify a departure from the state's historic policy regarding tuition. Accordingly, the Committee opposes the imposition of tuition for 1968-69 and any comparably large increase in student fees for the same purpose.

Opportunity and Attrition

Of 1,000 students who enter high school in California, about 800 will be graduated. Of these graduates, some 540 will enroll in a college somewhere. Of this group, fewer than 250 will complete more than their freshman year. Between 100 and 150 will eventually be graduated from some college somewhere.

From one point of view, these preliminary estimates of school persistence rates might be regarded with satisfaction since only 20% of high school entrants drop out before graduation and only 33% of the high school graduates do not at least enter college. In comparison with other states, these rates are very favorable and indicate, at the college level at least, that higher education is widely accessible to those who would enroll.

On the other hand, if formal education is indeed the principal instrument for developing the state's resources of human talent and skills, then the same data can be viewed with grave concern respecting the social and economic losses implicit in the proportions of students who do not complete high school or who do not attend, let alone complete, college.

Moreover, these losses and their multiple consequences become even more apparent when it is understood that in some areas the high school dropout rate may reach the level of 67% for students from low-income families and minority groups and that this percentage then carries over into college attendance figures for such students. Because the Committee is persuaded that the energies and talents of the state's citizens are the state's most important resource, satisfaction with the evident educational attainments of California must be tempered by concern for what yet remains to be done if the promise of the 1960 Master Plan is to be achieved.

While the Committee is fully persuaded that problems of talent loss through failure to attend or remain in college are of serious magnitude, it is as yet uncertain as to how to evaluate the public consequences of attrition at different points within a student's college career. Is it more advantageous, for example, to use financial aids to bring additional students into college or to make it possible for students already in to remain? Is attrition of greater public consequence at the graduate than the undergraduate level? Is attrition of equal consequence for women as for men or for engineers as for poets?

The Committee has become acutely aware of the fact that very little is known about the dimensions of the high school drop-out problem, the characteristics and motivations of high school and college drop-outs, the characteristics and motivations of high school graduates who do not go on to college and the exact nature and level of student assistance required to extend educational opportunity beyond its present bounds.

It appears very doubtful that a large-scale student aid program alone would result in a proportionately large increase in enrollment on the part of students from low-income families and minority groups. An effective student aid program designed to make the most efficient use of available funds may have to include a program of counseling by college students in the high schools, on-campus tutorial assistance, altered entrance requirements, a program to supplement existing transportation facilities for certain areas and other elements of this nature, as well as an increase in financial aid.

Accordingly, the Committee intends, first of all, to develop necessary factual information concerning the types of students to be reached and an understanding of what the specific objectives of a major assistance program should be. Only then will the Committee attempt to put together a comprehensive package of measures to achieve these objectives.

For the interim, there are steps which can be taken, such as those outlined in the report of the Committee by Dr. Kenneth Martyn, but these should be of an exploratory character to assist the Legislature to learn what kinds of programs will be effective in this area, rather than costly full-scale efforts undertaken in advance of adequate information and analysis.

The Private Sector

In contrast with the experience of many private colleges and universities in other parts of the country, the private colleges and universities in California have shown very substantial growth and development over the decade since the Master Plan studies. The private colleges collectly have maintained a rough parity with the University in enrollments and in the awarding of undergraduate, graduate, and professional degrees, although they appear to have taken a smaller share of the state's total enrollment increase over the last deade.

In the event that there may be opportunities for a greater contribution from the private colleges to the general public purposes of higher education, particularly in costly fields such as medical training, the Committee is interested in exploring the arguments for and against amendment of California's Constitution to make this possible. At present, it is impossible in any circumstance to expend state funds overtly for or through private institutions, even in cases where all parties might agree this would be advantageous to the public interest and to the interests of private colleges to do so.

At present the state does aid these private institutions by giving them tax-exempt status and through the state scholarship program, but it is very questionable whether any additional aid can or should be provided in this indirect manner, should circumstances prove the need for further assistance.

Organization and Governance

Although the Committee has scheduled its consideration of organizational questions in the second half of 1968, preliminary deliberations on questions of organization suggest that the current pattern of four independent statewide systems of higher education may create insurmountable barriers to effective educational planning and result in needlessly costly duplication and dislocation of educational effort.

The current pattern of functional assignments to classes of institutions rather than to individual institutions may in particular be a bar to flexible educational planning. Publicly supported university-level activities in metropolitan San Francisco, for example, now depend upon indefinitely postponed action by the Regents of the University of California. If it were possible to plan for an evolution of San Francisco State College into an institution providing a university-like breadth of courses and related activities, a second planning option would be available, whether or not San Francisco State College retained its membership in the state college system. Analogously, San Jose State College might make a stronger, less expensive, and better located candidate for a San Jose area metropolitan university than the Santa Cruz campus of the University.

These examples are intended merely as illustrations of the increased flexibility which might be obtained if individual institutions could be treated on a case by case basis. This presents a problem, however, as to how such planning is to be accomplished in view of the fact that each segment now jealously guards its own narrow interests in this regard.

Accordingly, the Committee intends to explore carefully alternative methods of breaking down the barriers that have been built up between the four separate systems—the public junior colleges, the California State Colleges, the University of California and the private colleges and universities—in order to bring about a consolidation of resources and effort and an end to needless competition. There are, of course, several approaches to this objective: a strengthening of existing coordinating machinery, creation of a new superboard, a consolidation of all three public systems under the Regents or other similar changes in governing organization. In the Committee's view, however, changes in the governing organization should follow more fundamental changes in the structure, functional specialization, and purposes of the systems themselves.

The Committee therefore plans to consider, for example, the possibilities for consolidating the three public segments of higher education into a single statewide system, perhaps subdivided geographically into 3-5 regional units. Each region, under such a plan, might include one or more university centers for research and graduate training, surrounded by several liberal arts institutions (and, perhaps, one or more specialized colleges) and an even larger supporting cluster of junior colleges to provide the greater part of lower division instruction.

The exact number and pattern of such institutions would be of much less importance than the fact that there would be no barriers between them to block a free trade in faculty, students, equipment and facilities or to prohibit planning on a regional basis for the best use of all public higher education resources. The present structure strongly discourages any interchange of resources, and it permits each system to develop plans with little or no regard for the planning being undertaken by the other systems, even when their objectives are, presumably, the same.

1. Introduction

The Academic State

If California may be characterized in terms of a predominant activity of its citizens, it may appropriately be called the Academic State. Almost 40 per cent of all Californians go to school, or teach school, or are otherwise proximately involved in the state's vast educational enterprises. With some 400,000 employees in the schools and colleges, education is among the state's largest industries, ranking with agriculture, fisheries and forestry, communication and transportation, and the entire construction industry. In dollar terms, California spent $1.7 billion or 57 per cent of its total General Fund budget in 1966-67 for education, plus $0.3 billion in federal funds and $1.6 billion in local revenues. Approximately 41 per cent of state General Fund expenditure for education was for public higher education.

School attendance is a principal activity for 94 per cent of Californians from ages 5 through 17, and more than 60 per cent of all Californians from ages 14 through 24 are registered for one or more credit courses in institutions of higher education, according to the most recent (1960) U. S. Census figures. Part-time adult enrollments in regular college courses and in extension courses are increasing markedly, reflecting the perceived value of formal instruction as an investment and the increasing leisure and affluence which permit the pursuit of education as a recreational or cultural activity.

The magnitude of the public and private investments involved and the importance of the activity to the quality and character of life in California provide continuing justification for public and legislative concern for the health and progress of the several major elements of the educational system. The tasks of the Joint Committee on Higher Education spring from this general concern. Accordingly, a brief explanation of the origin and particular purposes of the Joint Committee is in order, an explanation which relates to the timeliness of the assignment, the background of the Committee's work, the reasons for its coverage and methods, its progress to date, and the purposes and organization of this progress report.

A Decade Under the Master Plan

During its 1959 Session, in Assembly Concurrent Resolution No. 88, the California Legislature requested the Liaison Committee of the Board of Education and the Regents of the University of California:

> . . . "to prepare a Master Plan for the development, expansion, and integration of the facilities, curriculum, and standards of higher education, in junior colleges, state colleges, the University of California, and other institutions of higher education of the State to meet the needs of the State during the next ten years and thereafter. . ."

In response to this request, the Liaison Committee empaneled a Master Plan Survey Team which undertook this task with the assistance of a number of advisors and technical experts. The findings and recommendations of the Master Plan Survey Team were forwarded to the Legislature by the Liaison Committee in 1960 under the title of *A Master Plan For Higher Education In California*, 1960-1975. With certain exceptions, the recommendations of this Master Plan were translated over the succeeding years into policy, law, and patterns of budgetary emphasis. The Master Plan itself became the basic outline for the governance and development of higher education.

California's first decade under the Master Plan will be nearing its close when the Joint Committee on Higher Education presents its principal report to the Legislature in 1969. (It has already been a decade since the last year for which accurate enrollment and financial data were available to the Master Plan Survey Team.) The interval will have been a long one in view of the rapid development and changes in higher education which have taken place. The facts that helped determine the Master Plan recommendations need to be brought up to date. The judgments underlying the interpretation of those facts deserve reexamination in the light of nearly ten years' experience. Further, many of the recommendations themselves need to be reevaluated in respect to their current effectiveness in improving the coverage, efficiency and quality of public and private higher education in California.

These considerations, and others are evident in the origin of the Joint Committee on Higher Education and in the two resolutions which established it and which provide a framework for its efforts. (The full texts of these resolutions are provided in Appendix A.) The Committee is not simply engaged in an evaluation of the 1960 Master Plan; yet it must inevitably be concerned with much of the same territory covered by the Master Plan Survey Team in 1959, albeit from a different and later perspective.

Origins of the Joint Committee

Widespread concern over student unrest at the Berkeley campus of the University of California was the initial motivating factor for the establishment of the Joint Committee on Higher Education by the Legislature at the 1965 Session. The Committee's principal approach to this problem was to make possible a cooling-off period during which temporary excitement could subside and the regular mechanisms of academic administration be restored along with normal relations between the academic community and the Legislature. The Committee resisted efforts to push it into an aimless punitive investigation of the University, but maintained its watchfulness in the event that more active measures became necessary.

The Committee held no formal meetings between June, 1965, and September, 1966. Committee efforts during this 15-month cooling-off period were devoted to two principal activities: the establishment of informal channels of information and discussion between the Legislature and various segments of the educational communities of California, and the development of a draft outline for a program of Committee studies which was subsequently refined through informal review and discussion among Committee members, educators and interested citizens.

These lines of activity led to a gradual and heartening reestablishment of confident dialogue between the Legislature and officials of higher education. One result of this dialogue was the formal endorsement of the Committee's plans and proposed studies by the Regents of the University of California, the Trustees of the California State Colleges, the Coordinating Council for Higher Education, the State Board of Education, the Association of Independent California Colleges and Universities, and the California Junior College Association. These endorsements, accompanied by pledges of support and cooperation, were given to the Committee at its meeting in San Francisco on September 13, 1966.

Following the September meeting, a series of informal discussions and study review sessions were held with officers and representatives of all of the organizations representing faculty members in California higher education. These discussions led to pledges of cooperation and endorsement from the faculty groups at a Committee meeting held in Sacramento on November 23, 1966, attended by representatives of the following faculty associations:

- Academic Senate of the California State Colleges
- American Association of University Professors—Northern and Southern California Conferences
- Association of California State College Professors
- California Federation of Teachers
- California Junior College Faculty Association
- California State Employees Association
- California Teachers Association
- The Statewide Assembly of the Academic Senate of the University of California

In the early winter of 1966-67, further refinements were made to the generally approved study design. This revised design, together with a budget to sustain Committee operations through January 1969, was submitted by the Chairman to the Assembly Rules Committee on January 26, 1967. The study plan and budget were approved with few changes by the Assembly and Senate Rules Committees, and in April 1967, both houses passed Assembly Concurrent Resolution No. 16 giving the Joint Committee on Higher Education a renewed expression of legislative support, authorization for its planned activities and an additional appropriation of $250,000.

In concurrent action the Legislature also passed Assembly Concurrent Resolution No. 22 providing $50,000 for a study of the financial structure and practices of the University to be carried out by the Auditor General and to be submitted to the Committee for transmittal to the Legislature at the 1968 Session. The Legislature also amended the original resolution at the 1967 Session to direct the Committee to make a special report to the Legislature at the 1968 Session on the subject of tuition.

A Progress Report

The Committee is about midway in its twenty-month program of studies and it just now completing the initial harvest of data upon which it is to base its deliberations on the complex and interrelated questions of cost, access, structure and organization. Most of these deliberations still lie ahead. Accordingly, this report contains few firm conclusions or recommendations aside from those regarding the matter of tuition.

The Committee is hopeful that this progress report will be read carefully by members of the Legislature, members of the academic community, and others with a strong interest in higher education in California. The Committee seeks and welcomes comments and criticism concerning what is said in this report and, where pertinent, what is not said. Indeed, an important purpose of this report is to elicit such participation in the Committee's work and suggestions for strengthening this important study.

In line with this, the Committee will appoint shortly an Advisory Committee which will be asked to review the Committee's preliminary findings and to make suggestions on matters of emphasis, coordination and technical feasibility for the balance of the study and the final report.

The remainder of this document is organized into five sections. The following section consists of an outline and description of the Committee's study plan, a brief description of current and recently completed studies done under contract to the Committee, and some comments on the obstacles the Committee and its staff have come up against in undertaking this work.

The third section presents a statistical profile of the years since the Master Plan was adopted, including data on enrollment growth, financial support and measures of productivity. This section concludes with a summary of what the 1960 Master Plan did and did not accomplish in this regard.

The fourth section presents a set of short-range forecasts of what might be expected in higher education if no important policy changes occur. Wherever possible, these forecasts are made in the same terms and units used in the previous section.

The fifth section presents an annotated list of policy choices which will be under consideration by the Committee in 1968. The list includes alternative methods of financing, revised programs of student aid, new modes of organization and governance and possible changes in the State Constitution. The annotations include estimates of the consequences of the several policy alternatives in those cases where the Committee's own studies or those of other educational study groups have produced such estimates.

Some of the analytic and conceptual tools which might be used by the Legislature in evaluating policy alternatives and in reaching consistent decisions on policy changes are discussed in the sixth section. This section makes extensive reference to the findings and recommendations of a study by the Office of the Auditor General of the financial reporting systems of the University of California, and also to certain recent findings by economists who have studied higher education. Since many areas of policy formulation and debate are hampered by lack of data, some major data needs and the steps now being taken to remedy data shortages are outlined here.

2. The Committee's Study Plan and A Summary of Current Work

The Study Plan

Within the broad framework of a review of higher education in California since the Master Plan, the Committee has elected to focus its attention on six major topics.

1. THE COSTS OF HIGHER EDUCATION

This term is to include not only the monies appropriated from the state General Fund but the total resources which go to support higher education in California. Private costs associated with attending school are deemed to be as relevant as public costs to this comprehensive review. Federal funds, private benefactions and other types and sources of support are also included.

2. THE BENEFITS OF HIGHER EDUCATION

Given the substantial public and private investments in higher education, it is essential to learn what the several benefits are which accrue to society and to individuals from the processes of instruction and research. How, when and to whom do these benefits accrue? What are the terms and modes of analysis applicable to the characterization and measurement of these benefits? How might these analyses be applied to the formulation or evaluation of comprehensive education policies at the state level?

3. ACCESS TO HIGHER EDUCATION

Under this topic the Committee will attempt to determine exactly who goes to college and who does not go, what the terms and conditions for entry and for persistence are in the several institutions, whether there are undesirable elements of bias implicit in the formulation of entrance requirements or in the incidence of educational costs to students and their families, and whether there are other obstacles to access which can be reduced by action of the Legislature.

4. STUDENT MIGRATION

California and its students must be viewed as elements in a national and even worldwide system of education. Accordingly, the Committee will try to determine the magnitudes and characteristics of the flows of students among institutions in California and elsewhere and between collegiate enrollment and other activities. It will also attempt to assess the balance of trade in educational manpower between California and other portions of the country and the world, and learn how these flows relate to the interpretation of drop-out data and to the evaluation of local training versus importation as alternative techniques for acquiring trained manpower for California's labor force.

5. STRATEGIC USES OF HIGHER EDUCATION

Pressures toward larger enrollments, more institutions and expanded instructional and research programs will undoubtedly remain high over the next decade. These educational requirements, together with those of health, welfare and other areas of state service, will probably produce increasingly severe pressure upon the resources of the state under current revenue structures. With these pressures, and, indeed, even without them, it will be important to survey the range of collateral purposes which might be served by the timing, location and mode of educational investments made basically for educational reasons. For example, can University campuses be used deliberately and appropriately as anchors for urban redevelopment plans? Should rural locations be selected for campuses in order to offset declining regional economic activity? Should universities and colleges be used explicitly as instruments of social engineering with respect to heightening the mobility of minority children? Should industries and areas of the state in addition to agriculture receive research subsidies through state appropriations to the University of California? Broadly stated, what other important public purposes, in addition to those of education, can be served by educational investment?

6. ORGANIZATION AND GOVERNANCE

As its final topic, the Committee selected that of organization and governance. How best are the resources for education to be generated and deployed? What pattern of laws and regulations is best suited to orderly administration? What should be the membership of governing boards, and for what terms should members serve? What, if any, changes in the state's Constitution, with respect to higher education, might be considered and exposed to debate and evaluation?

The Committee had originally planned to devote a part of the study resources to the topic of manpower requirements, to determine whether the apparatus of manpower planning could be employed at the state level as one of several inputs to educational planning. Professor Nicholas De Witt, a leading authority on manpower planning and its relationships to higher education, prepared an introduction to this general topic for the Committee. On the basis of his report and other calculations of the complexities of the subject and the potentially high research costs involved, the Committee has regretfully decided it must set aside the manpower study in order to concentrate its available resources on the several topics of more immediate concern listed above.

The Committee is aware that still other topics could have been selected and that not all the possible issues of policy could be comprehended under this or any research agenda. In particular, the Committee regrets that its time, resources and evaluation of relative priorities will not allow for detailed consideration of the broad field of adult and continuing education.

In designing its study agenda, the Committee was guided by the relevance of study topics to those areas of higher education policy which are characteristically and regularly a matter for legislative action: the education budget, sources of revenue, admissions requirements, differentiation of functions, the mix of purposes to be served by public institutions and general provisions for organization and governance. Many if not all of these legislative responsibilities are shared with the executive branch of government, with governing boards and with the several constituencies and interest groups which serve and are served by elements of the education system. Nonetheless, the Legislature has a fundamental responsibility under the California Constitution in each of these areas.

In contrast to the topics included for study, the Committee excluded from its consideration matters internal to the operation of individual institutions or campuses and matters of operating and capital budget detail which come before the Legislature annually.

Although the problem of student unrest and the resulting disorder on the campuses of public institutions provided the initial impetus for formation of the Committee, the Committee's study plans do not now include any direct references to these subjects. In the context of current events this is a notable and perhaps glaring exclusion; the matter of student unrest and campus disorders may yet become an overriding issue in public higher education. Nevertheless, it is the Committee's judgment that this is not now the case, and that the Committee efforts will be more productive if directed at the fundamental issues of educational strategy, structure and finance listed above.

Summary of Current Work

The Committee's program of research and investigation has been in operation since May, 1967. In the seven-month period prior to the drafting of this progress report, the Committee assembled materials on enrollments, expenditures and revenues which are summarized in part in Section III. Close working liaison was established with the Coordinating Council for Higher Education staff group which conducted a survey of high school seniors and their families in the spring of 1967, and with the University and state college teams which conducted surveys of the financial resources of students.

Through the mechanism of a formal contract with the Association of Independent California Colleges and Universities, the Committee is receiving data on the recent growth in enrollments and expenditures in the private colleges, together with information on the production of degrees, changes in the mix of revenue sources and other pertinent matters.

A report has been prepared under contract by Professors Burton Weisbrod and W. L. Hansen of the Department of Economics at the University of Wisconsin concerning the benefits which flow from investment in higher education. This report has been reviewed by three prominent California economists, Professors Seymour Harris, Kenneth Arrow and Werner Hirsch.

The Office of Analytical Studies of the University of California was selected, on the basis of competitive research proposals, to undertake a preliminary study of the complicated questions of student migration, about which very little is known. The first portion of the OAS research is aimed at the design of a basic statistical format for the collection, display and analysis of data on the flow of students from institution to institution and from collegiate enrollment to other activities. The second component of the study will cover the design and preliminary cost estimation of a continuing program of data collection. Some isolated sets of data are available from existing records or from such special studies as SCOPE and Project Talent, and these data will be used within the study for illustrative purposes.

Dr. Kenneth Martyn, Vice President for Academic Affairs, California State College at Los Angeles, is undertaking a study for the Committee concerning the relationship between student aid and access to higher education. Dr. Martyn's initial findings pertain to the principal hurdles which low-income and minority group students must surmount to obtain higher education, present student aid programs in California, the relationship between these programs and the previously identified obstacles, and suggested legislative action of an exploratory character to improve access to higher education for such students.

As was expected, the research results obtained to date form an irregular profile of achievement. The Committee is finding that most of the major policy issues on its agenda are served badly or not at all by available data. Accordingly, it is becoming clear that many of the Committee's findings and recommendations will be qualified in relation to the adequacy of information on which the results are based, and that one major set of recommendations most probably will be related to the design and initiation of improved programs of policy-oriented data collection and analysis so that subsequent effort at legislative review may be conducted from an improved base of information and analysis.

For example, no one knows with accuracy or for any historical time period, the number of students eligible for the University or the state colleges who never attend any college or university. Except for isolated and partial studies, little is known about where graduate or undergraduate students go who leave the University or state colleges without completing a degree. The apparent, aggregated attrition rates for all college students in California, including those in junior colleges, are among the highest in the nation and are growing worse. It is known that many students who leave one institution eventually complete a degree at some other institution in later years, but the magnitude of the corrections to be applied to the gross or unadjusted attrition rates is not known with reasonable accuracy for different institutions or for different kinds of students.

These matters are cited as examples of the scarcity of basic data which limits the precision of the Committee's findings to date on such important topics as participation rates, attrition rates and rates of degree completion. It is clear that for too long important decisions have been made regarding the structure and function of higher education without the benefit of adequate factual information on these critical measures. One of the most important tasks of the Joint Committee on Higher Education has been and will be to reduce the area in which fundamental decisions about public higher education might continue to be made on the basis of vague intuition, individual convictions and guesswork.

3. A Statistical Profile of California Higher Education Over The Past Decade

Higher education in California was, in total, a vast and complex academic enterprise in 1960 when the Master Plan was enacted. It is much larger today and still growing rapidly. This section describes some of the more significant dimensions of California's system of higher education as it has evolved during the decade from 1957-58, which was the last year of actual data for the Master Plan study, through 1966-67.

The Institutional Setting

Higher education and post-secondary education have overlapping but not identical meanings. The latter term, for example, includes educational programs offered by the military services and instructional programs given by commercial and industrial organizations for their own employees. This more general term also includes instruction in bible studies, business methods, applied marine engineering and other specialized fields offered in small, non-accredited and often proprietary schools and colleges. Information on the extent and character of these areas of post-secondary education could be assembled only at a prohibitive cost to the Committee in time and effort.

Accordingly, and despite the importance and relevance of these institutions and programs to the total offerings in California, the scope of this discussion is limited to "higher education." As used here, the term higher education refers to the instructional and other activities conducted within the three public segments —the University of California, the California State Colleges, and the public junior colleges—and within the private colleges and universities which are members of the Association of Independent California Colleges and Universities. On the basis of this working definition of higher education, Table 3.1 shows the number of institutions by category and the growth of institutions and enrollments during the Master Plan period.

The extraordinary diversity among the institutions, programs and students in California's higher education is a primary fact of any review of the field. Readers should remember that comparative statistics mask considerable and important differences among the institutions counted, and that these differences may include those of quality, purpose, programs, historical antecedent and level of resources.

Table 3.1 **GROWTH OF HIGHER EDUCATION INSTITUTIONS AND TOTAL ENROLLMENT IN CALIFORNIA, 1957-1958 TO 1966-1967**[1]

SEGMENTS	1957-58		1966-67		ENROLLMENT INCREASE FACTOR*
	INSTITUTIONS	ENROLLMENT	INSTITUTIONS	ENROLLMENT	1966-67 / 1957-58
University of California	6	42,052	9	86,406	2.05
State Colleges	11	72,083	18	169,520	2.35
Public Junior Colleges	62	227,698	77	487,458	2.14
AICCU (private) Institutions	44	51,041	48	83,426	1.64
Total	123	392,874	152	826,810	2.10

*It should be emphasized that this table presents data on total (head count) enrollment rather than on full-time enrollment. Increase factors would be somewhat different for the various segments if full-time enrollments were used. The reader is referred to the discussion of enrollment measures under "The Demographic Background" in this section of the report, and also to the more detailed discussion in Appendix C.

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[1] This note and all subsequent numbered footnotes in the report refer to Section Notes in Appendix B, where sources for the tables and technical notes and comments are presented.

The Demographic Background

The growth in collegiate enrollment over the period 1957-58 to 1966-67 is a product of several different factors acting concurrently. First and most obvious is the substantial (36 per cent) growth in the total population of California—from 13,848,000 to 18,792,000—during this period. A second factor has been the growing size, both in aboslute and relative terms, of the age groups from which most college students come.

A third cause of enrollment increases is the fact that more older students are enrolled in colleges and universities than was formerly the case; i.e., that the college-age group itself has broadened. In part this increase is due to planned expansions of graduate and professional curricula. It is also attributable to the growing importance of part-time or intermittent study as a means of enhancing professional competence in teaching, law, medicine, computer technology and many other fields. While the increase in college enrollment among those in the over-24 age group is apparent to those familiar with the state's major institutions, its magnitude is not known because of the lack of current and historical data on the age distribution of students.

A fourth factor in enrollment growth is the apparent

Table 3.2 **HIGHER EDUCATION ENROLLMENT IN CALIFORNIA AS A PERCENTAGE OF STATE CIVILIAN POPULATION, 1900-1970***

ACADEMIC YEAR* (a)	TOTAL CIVILIAN POPULATION** (thousands) (b)	TOTAL ENROLLMENT HIGHER EDUCATION (c)	% OF TOTAL CIVILIAN POPULATION ENROLLED IN HIGHER EDUCATION $\frac{(c)}{(b)}$ (d)	FULL-TIME ENROLLMENT HIGHER EDUCATION (e)	% OF TOTAL CIVILIAN POPULATION ENROLLED FULL-TIME IN HIGHER EDUCATION $\frac{(e)}{(b)}$ (f)
1971-1972	21,947	1,199,248	5.46	645,300	2.94
1970-1071	21,365	1,109,313	5.20	600,800	2.85
1969-1970	20,154	1,028,371	5.10	558,200	2.78
1968-1969	19,662	971,389	4.95	524,800	2.66
1967-1968	19,185	891,327	4.66	482,200	2.52
1966-1967	18,792	826,810	4.40	453,441	2.41
1965-1966	18,417	773,831	4.20	422,388	2.28
1964-1965	17,902	706,968	3.95	365,769	2.04
1963-1964	17,349	638,210	3.66	320,584	1.85
1962-1963	16,737	582,545	3.48	295,675	1.77
1961-1962	16,163	582,545	3.28	272,649	1.69
1960-1961	15,567	496,700	3.20	245,601	1.58
1959-1960	14,964	449,219	3.00	222,882	1.53
1958-1959	14,410	436,544	3.03	216,128	1.50
1957-1958	13,848	392,874	2.84	199,281	1.51
1956-1957	13,247	361,342	2.73	192,338	1.45
1955-1956	12,668	321,778	2.54	181,113	1.43
1950-1951	10,473	239,905	2.29	162,521	1.55
1945-1946	8,523	244,903	2.88		
1940-1941	6,899	170,735	2.48	Not Available	
1935-1936	6,175	93,001	1.51		
1930-1931	5,711	67,961	1.19		
1925-1926	4,730	44,421	.94		
1920-1921	3,556	24,634	.69		
1910-1911	2,406	11,000	.46		
1900-1901	1,490	6,000	.40		

*Fall Semester enrollments are used throughout except for the projections of University of California enrollment, which are annual averages.

**This column is based on the calendar year coinciding with the first half of the academic year, i.e., the population figure for 1966 is entered for the 1966-67 school year.

increase in participation rates for people in the traditional 18-24 college-age group. Certainly over the long-term past there has been a marked increase in the number of 20-year-olds who go on to college, both in California and nationally. Unfortunately, no reliable data are currently available to indicate whether age-group participation rates are continuing to increase and, if so, to what extent for each age bracket.

In the absence of more detailed and more useful data on age-specific participation rates for the full range of applicable ages, total collegiate enrollments may be expressed in relation to the total civilian population in California. Table 3.2 provides such a tabulation for total enrollment and full-time enrollment, the latter reflecting only those students who are taking 12 units or more of instruction. For purposes of long-term comparison, the data are summarized back to 1900, with greater detail for the most recent years. It can be noted that gains in participation rates have been slow and continuous, the largest gains having occurred in the past decade or so. The rate of increase has itself been increasing.

Although age-specific participation data are far from satisfactory, available statistics do clearly indicate California's rates relative to those for the nation as a whole. Census data for 1960, summarized in Table 3.3, show that California's age-specific rates of college attendance are higher than those of the United States as a whole for every age from 16 through the 30-34 bracket.

Table 3.3 **COMPARISON OF AGE-PARTICIPATION RATES FOR COLLEGE ATTENDANCE, UNITED STATES AND CALIFORNIA, 1960**[4]

AGE	PER CENT IN COLLEGE	
	UNITED STATES	CALIFORNIA
16	0.2%	0.3%
17	2.0	3.6
18	18.8	26.4
19	22.6	28.0
20	18.8	22.3
21	15.2	17.5
22	9.8	12.4
23	7.1	9.7
24	6.0	8.8
25-29	4.1	6.3
30-34	1.8	3.1

It is probable that all or most of the following factors underlie the increases in California's overall participation rates:

1. In comparison with many other states, California students, individually and collectively, pay a smaller fraction of the total cost of education because of the more numerous public institutions and because of their historic policy of low student charges.
2. The rapid expansion of junior colleges in California, further encouraged by the Master Plan, has permitted more students to attend institutions at a lower total cost while living at home without having to pay the full out-of-pocket costs of room and board at a separate residence.
3. The improved geographic distribution of public junior colleges and expansion of state college capacities in the metropolitan areas has encouraged college attendance on a part-time basis.
4. The generally perceived investment value of college training may be increasing as people become aware of the relative decrease in unskilled jobs and the comparable increased demands and rewards for persons with technical and professional training in California economy.
5. Increasing general affluence means that more individuals and families can afford to forego the earnings lost when school attendance is substituted for employment, even though the magnitude of foregone earnings may be increasing as general wage rates rise. The social, cultural and recreational values of the college may be receiving heightened esteem at a time when declining net personal costs of education and increasing general affluence make the consumption of college services more widely available.

Unfortunately, there is no simple answer to the question: How many college students are there in California? What constitutes a college and what constitutes a college student require explicit definition. Depending upon the purpose to be served and the definitions selected, collegiate enrollments for 1966-67 can range from a low figure of 450,000 full-time students, which excludes part-time students and those taking courses without credit or in extension programs, to a high of roughly 1,000,000, which represents an estimate of the number of individuals enrolled for at least one course of any kind in any accredited public or private college or university. For the several purposes of planning and budgeting, more than 20 different measures of enrollment are currently in use by state agencies and institutions. In Appendix C we summarize these statistical units, their differences, and the special purposes for which they are used.

The head count of total full-time and part-time individuals is what is meant by the term "total enrollment" in post-high school courses in public or private institutions. Each individual in this numeration system counts for one unit regardless of the number of courses for which he is enrolled. Alternatively, part-time students may be excluded and only full-time students, usually those enrolled for 12 or more units of study, may be counted, as was done in the 1960 Master Plan. For budget purposes, a composite measure of academic load, the "full-time equivalent student (FTE)," is often used. This unit, and its close cousin in the public school system, average daily attendance (ADA), are produced by dividing units of credit or hours spent in class by a number representing the typical, full-time load.

In assembling and reporting summary findings on the trends in enrollments since the Master Plan, the Committee most frequently uses total enrollment figures. In many places, however, this practice is qualified or supplemented with other types of measures better suited to the findings themselves or to the exploration of particular issues. For example, for certain historical and comparative purposes, it is necessary to use full-time student enrollment since full-time student units were used extensively by the Master Plan Survey Team.

Enrollment by Segment

As is noted in Table 3.2 above, total fall enrollments in all four segments of higher education have risen from 392,874 in 1957-58 to 826,810 in 1966-67, an increase of 110 per cent.

Table 3.4 **DISTRIBUTION OF TOTAL ENROLLMENT IN HIGHER EDUCATION IN CALIFORNIA BY SEGMENT, 1957-1958 TO 1966-1967**[1]

ACADEMIC YEAR (Fall Semester)	UNIVERSITY OF CALIFORNIA		CALIFORNIA STATE COLLEGES		PUBLIC JUNIOR COLLEGES		AICCU INSTITUTIONS		TOTAL	
	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL
	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1966-1967	86,406	10.5	169,520	20.5	487,458	59.0	83,426	10.1	826,810	100.0
1965-1966	79,437	10.3	154,887	20.0	459,400	59.4	80,107	10.4	773,831	100.0
1964-1965	71,267	10.1	148,796	21.1	411,338	58.2	75,407	10.7	706,968	100.0
1963-1964	64,504	10.1	133,108	20.9	368,008	57.2	72,590	11.4	638,210	100.0
1962-1963	58,616	10.1	118,057	20.3	336,704	57.8	69,168	11.9	582,545	100.0
1961-1962	54,265	10.2	105,858	20.0	305,201	57.5	65,149	12.3	530,473	100.0
1960-1961	49,719	10.0	95,081	19.1	289,998	58.4	62,002	12.5	496,800	100.0
1959-1960	44,860	10.0	88,082	19.6	257,821	57.4	58,456	13.0	449,219	100.0
1958-1959	43,490	10.0	81,030	18.6	256,856	58.8	55,168	12.6	436,544	100.0
1957-1958	42,052	10.7	72,083	18.3	227,698	58.0	51,041	13.0	392,874	100.0

In contrast to the long-term growth in total higher education enrollments, Table 3.4 displays the recent growth in total collegiate enrollment in California by segment. Table 3.5 presents the same data calculated on the basis of full-time rather than head count enrollments. The percentage distribution of total enrollment has remained quite stable among segments over the period since 1957-58. While total enrollment has risen 110 per cent from 1957-58 to 1966-67, the percentage distribution of this enrollment remained fairly steady in the approximate ratio of 10:10:20:60 for the University, the AICCU institutions, the state colleges and the junior colleges, except that the private institutions have absorbed a somewhat smaller percentage of the enrollment growth than have the public segments during this period. Because each of the segments enrolls quite different percentages of part-time students, these ratios shift appreciably (from 20:19:21:40 in 1957-58 to 18:14:24:44 in 1966-67) when the enrollment measure of full-time students rather than head count is used. Because the junior colleges enroll the highest proportion of part-time students (about 60 per cent currently) the relative share of total enrollment served by these institutions shows the greatest decline with the change to full-time enrollment measures. The state colleges, with about 35 per cent of their students on part-time status, show relatively little percentage change. The private colleges and the University, where part-time attendance is far less common, have a substantially larger share of the market when only full-time enrollment is considered.

Enrollment by Class Level

The higher educational system of California resembles a building with a disproportionately large lobby or entrance hall. Roughly half of the college students in California are freshmen. Another 20% are sophomores, so that lower division enrollment accounts for 70% of total enrollment at all levels of instruction. These findings respecting the current distribution of students by class level are summarized in Tables 3.6 and 3.7. The enrollment figures by class level for each segment may be found in Appendix E. The figures reported in this section and Appendix E all refer to the class level of the students themselves rather than the level of course enrollment.

Table 3.7 summarizes the changes which have occurred in the relative sizes of the several classes by segment between 1959-60 and 1966-67. This shorter base period was selected because of serious imperfections in the data for earlier years. In part because of the statistical effects of the relatively large population of unclassified students in the early years of the comparison period, the significance of these shifts is somewhat reduced and difficult to explain.

It can be seen that in the University, the freshman and sophomore classes have increased in relative size (contrary to Master Plan doctrine) while the upper division has shrunk slightly, largely as a result of a quite impressive decline in the size of the senior class. Graduate enrollments have moved from a bit less than 27 per cent to about 30 per cent.

Within the state colleges, the lower division has decreased markedly, perhaps as a result of students prefering junior colleges for these initial years. The upper division has remained stable and the graduate enrollments have increased from 21 to over 23 per cent.

The independent colleges show pattterns of change similar to those of the University: increases in the first two years, decreases in the upper division, and a marked increase at the graduate level.

Table 3.5

DISTRIBUTION OF FULL-TIME ENROLLMENT IN HIGHER EDUCATION IN CALIFORNIA BY SEGMENT, 1950-1951 TO 1966-1967[a]

ACADEMIC YEAR (Fall Semester)	UNIVERSITY OF CALIFORNIA		CALIFORNIA STATE COLLEGES		PUBLIC JUNIOR COLLEGES		AICCU INSTITUTIONS		TOTAL	
	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1966-1967	82,585	18.2	110,274	24.3	198,135	43.7	62,447	13.8	453,441	100.0
1965-1966	75,743	17.9	98,840	23.4	188,874	44.7	58,931	14.0	422,388	100.0
1964-1965	67,070	18.3	92,454	25.3	152,401	41.7	53,844	14.7	365,769	100.0
1963-1964	61,073	19.1	80,188	25.0	128,221	40.0	51,102	15.9	320,584	100.0
1962-1963	55,775	18.9	71,502	24.2	121,283	41.0	47,115	15.9	295,675	100.0
1961-1962	51,340	18.8	64,099	23.5	112,638	41.3	44,572	16.3	272,649	100.0
1960-1961	46,801	19.1	56,480	23.0	99,783	40.6	42,537	17.3	245,601	100.0
1959-1960	42,386	19.0	49,711	22.3	90,254	40.5	40,531	18.2	222,882	100.0
1958-1959	41,166	19.0	44,679	20.7	91,426	42.3	38,857	18.0	216,128	100.0
1957-1958	39,444	19.8	41,582	20.9	80,916	40.6	37,339	18.7	199,281	100.0
1956-1957	37,522	19.5	38,338	19.9	74,082	38.5	42,396	22.0	192,338	100.0
1955-1956	37,035	20.4	33,910	18.7	70,165	38.7	40,003	22.1	181,113	100.0
1954-1955	32,563	20.0	29,437	18.1	63,019	38.7	37,847	23.2	162,916	100.0
1953-1954	32,636	22.2	24,712	16.8	52,142	35.6	37,167	25.3	146,657	100.0
1952-1953	33,326	23.1	25,162	17.4	52,818	36.6	33,120	22.9	144,426	100.0
1951-1952	34,883	24.2	24,160	16.8	48,674	33.8	36,446	25.3	144,163	100.0
1950-1951	39,492	24.3	25,369	15.6	56,624	34.8	41,036	25.2	162,521	100.0

Table 3.6 **DISTRIBUTION OF TOTAL ENROLLMENT BY CLASS LEVEL FOR ALL SEGMENTS OF CALIFORNIA HIGHER EDUCATION, 1957-1958 TO 1966-1967'**

ACADEMIC YEAR	FRESHMEN		SOPHOMORES		JUNIORS		SENIORS		GRADUATE		OTHER STUDENTS*		TOTAL	
(Fall Semester)	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%
1966-1967	406,136	49.1	161,633	19.5	74,811	9.0	58,934	7.1	91,637	11.1	33,654	4.1	826,805	100.0
1965-1966	391,744	50.6	146,598	18.9	63,303	8.2	55,681	7.2	86,486	11.2	30,019	3.9	773,831	100.0
1964-1965	357,956	50.6	131,910	18.7	58,581	8.3	51,796	7.3	80,810	11.4	25,915	3.7	706,968	100.0
1963-1964	314,857	49.3	112,851	19.2	51,783	8.1	45,727	7.2	74,732	11.7	28,260	4.5	628,210	100.0
1962-1963	276,786	47.5	115,965	19.9	46,534	8.0	40,828	7.0	65,586	11.3	36,846	6.3	582,545	100.0
1961-1962	245,142	46.2	102,350	19.3	41,085	7.7	37,201	7.0	59,547	11.2	45,148	8.5	530,473	100.0
1960-1961	227,627	45.8	95,029	19.1	38,420	7.7	35,609	7.2	52,935	10.7	47,080	9.5	496,700	100.0
1959-1960	200,201	44.6	87,975	19.5	35,796	8.0	32,180	7.2	45,863	10.2	47,204	10.5	449,219	100.0
1958-1959	186,938	42.8	88,607	20.3	33,773	7.7	31,085	7.1	40,727	9.3	55,414	12.7	436,544	100.0
1957-1958	161,196	41.0	79,221	20.2	29,868	7.6	27,044	6.9	28,226	7.2	67,319	17.1	392,874	100.0

*See footnote to Table 3.7.

Student Characteristics and Attendance Patterns

Table 3.8 summarizes recent data on the changes in the proportion of part-time and full-time students. The proportion of part-time students has decreased slightly but is still substantial, particularly in the junior colleges and the state colleges. It should be noted that the University, until recently, counted nearly all graduate students as full-time, no matter how few courses they took. The state colleges, on the other hand, count graduate students in the same way as undergraduates; therefore, the data for the University and the state colleges are not comparable in this respect.

The proportion of full-time students at the University appears to have been quite stable, within the range of 94 to 96 per cent of all University enrollment, whereas the comparable figure for state colleges has moved

Table 3.7 **CLASS LEVEL DISTRIBUTION CHANGES BY SEGMENT IN CALIFORNIA HIGHER EDUCATION, 1959-1960 TO 1966-1967***

CLASSES	UNIVERSITY OF CALIFORNIA		CALIFORNIA STATE COLLEGES		PUBLIC JUNIOR COLLEGES		AICCU INSTITUTIONS		ALL SEGMENTS	
	1959-60	1966-67	1959-60	1966-67	1959-60	1966-67	1959-60	1966-67	1959-60	1966-67
Freshmen	17.3%	20.1%	18.8%	15.6%	63.7%	70.9%	19.7%	20.0%	44.6%	49.1%
Sophomores	15.0	15.3	13.8	13.1	23.3	23.1	15.6	16.5	19.5	19.5
Juniors	18.4	21.2	21.2	26.0	—	—	15.2	14.8	8.0	9.0
Seniors	18.1	13.0	17.6	21.9	—	—	14.6	12.6	7.2	7.1
Graduates	26.9	29.9	20.9	23.3	—	—	26.3	31.4	10.2	11.1
Other Students*	4.3	0.5	7.7	0.0	13.0	6.0	8.7	4.6	10.5	4.1
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

*The term "Other Students" refers to those students who have a degree but are not working toward an advanced degree. For instance, students who have bachelor degrees who are enrolled in undergraduate courses to prepare for advanced studies are classified as "Other Students."

Table 3.8 PERCENTAGE DISTRIBUTION OF PART-TIME AND FULL-TIME ENROLLMENT BY SEGMENT, CALIFORNIA HIGHER EDUCATION, 1957-1958 TO 1966-1967*

ACADEMIC YEAR (Fall Semester)	UNIVERSITY OF CALIFORNIA		CALIFORNIA STATE COLLEGES		PUBLIC JUNIOR COLLEGES		TOTAL PUBLIC SECTOR		AICCU INSTITUTIONS		TOTAL HIGHER EDUCATION	
	FULL-TIME	PART-TIME	FULL-TIME	PART-TIME	FULL-TIME	PART-TIME	FULL-TIME	PART-TIME	FULL-TIME	PART-TIME	FULL-TIME	PART-TIME
1966-1967	95.6%	4.4%	65.1%	34.9%	40.6%	59.4%	52.6%	47.4%	79.9%	30.1%	54.8%	45.2%
1965-1966	95.3	4.7	63.8	36.2	41.1	58.9	52.4	47.6	73.6	26.4	54.6	45.4
1964-1965	94.1	5.9	62.1	37.9	37.1	62.9	49.4	50.6	71.4	28.6	51.7	48.3
1963-1964	94.7	5.3	60.2	39.8	34.8	65.2	47.6	52.4	70.4	29.6	50.2	49.8
1962-1963	95.2	4.8	60.6	39.4	36.0	64.0	48.4	51.6	68.1	31.9	50.8	49.2
1961-1962	94.6	5.4	60.6	39.4	36.9	63.1	49.0	51.0	68.4	31.6	51.4	48.6
1960-1961	94.1	5.9	59.5	40.5	34.4	65.6	46.7	53.3	68.6	31.4	49.4	50.6
1959-1960	94.5	5.5	56.4	43.6	35.0	65.0	46.7	53.3	69.3	30.7	49.5	50.5
1958-1959	94.7	5.3	55.1	44.9	35.6	64.5	46.5	53.5	70.4	29.6	49.5	50.5
1957-1958	93.8	6.2	57.7	42.3	35.5	64.5	47.4	52.6	73.2	26.8	50.7	49.3

upward from about 58 per cent to about 65 per cent between 1958 and 1967. Over this same base period, the proportion of full-time students in junior colleges has increased from roughly 36 per cent to about 41 per cent, and in private colleges the proportion of full-time students has risen from 73 per cent to about 80 per cent.

As was noted earlier, the quite different proportions of full-time and part-time students in each of the segments account for the quite different statistical results obtained when using total enrollment measures rather than full-time enrollment measures. This is particularly true of the junior colleges, which report 198,135 full-time students but a total enrollment of 487,458 when 289,323 part-time students are added.

The proportion of women enrolled in colleges and universities has been increasing in all of the public segments. Table 3.9 shows these trends and provides a comparison with changes in the proportion of women in the 18-24 age group of the total population. As women tend to have higher attrition rates than men, increases in the proportion of women in college, other

Table 3.9 WOMEN STUDENTS AS A PERCENTAGE OF TOTAL ENROLLMENT IN CALIFORNIA PUBLIC INSTITUTIONS OF HIGHER EDUCATION, AND OTHER COMPARISONS, 1957-1958 TO 1966 1967"

ACADEMIC YEAR (Fall Semester)	UNIVERSITY OF CALIFORNIA	CALIFORNIA STATE COLLEGES	JUNIOR COLLEGES	ALL PUBLIC INSTITUTIONS NUMBER		WOMEN IN CALIFORNIA AGE 18-24	AGE GROUP PARTICIPATION RATE FOR WOMEN	AGE GROUP PARTICIPATION RATE FOR MEN	AGE 18-24 PARTICIPATION RATIO OF WOMEN TO MEN (b)/(h)
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1966-1967	39%	43%	40%	302,083	41%	1,006,000	30.0%	49.2%	0.61%
1965-1966	39	42	38	271,018	39	950,000	28.5	50.0	0.57
1964-1965	39	43	37	244,702	39	861,000	28.4	51.2	0.55
1963-1964	38	42	37	215,946	38	820,000	26.3	49.2	0.53
1962-1963	38	42	37	194,950	38	771,000	25.2	48.2	0.52
1961-1962	37	41	37	175,733	38	733,000	24.0	46.6	0.51
1960-1961	37	40	38	166,363	38	678,000	24.6	47.1	0.52
1959-1960	36	39	36	143,705	37	671,000	21.4	45.2	0.47
1958-1959	35	39	36	137,899	36	658,000	21.0	46.1	0.46
1957-1958	34	39	35	121,363	35	639,000	19.0	43.2	0.44

things equal, may be associated with further increases in total attrition rates and hence with a decrease in the number of degrees granted or curricula completed per unit of enrollment.

College students, as a group, appear to be getting older. This result is not caused by delayed entrance but by a combination of increased graduate enrollment, increased part-time enrollments (which have a markedly older age distribution), and possibly a phenomenon which has been called the "stretch-out" effect. This term denotes what may be a growing pattern of interrupted college attendance; for example, after completing his freshman year, a student may spend two years in the army, go back to school, drop out to get married, and then finish work toward a degree by attending the senior year part-time. The elapsed period between entrance and the obtaining of a degree, at both the undergraduate and the graduate levels, seems to be increasing.

To obtain precise data on the magnitude and character of these stretch-out effects, it will be necessary to conduct follow-up studies on students who leave California institutions, in order to determine where they go, what they do, and whether or not they return to college. A basic framework for such students is being prepared for the Committee by the University's Office of Analytical Studies.

Since historical data are lacking, Chart 3.10 shows the age of students in the University and the state colleges as of spring, 1967. We have included a very rough estimate for the junior colleges, but there is no comparable, detailed information for the private universities and colleges.

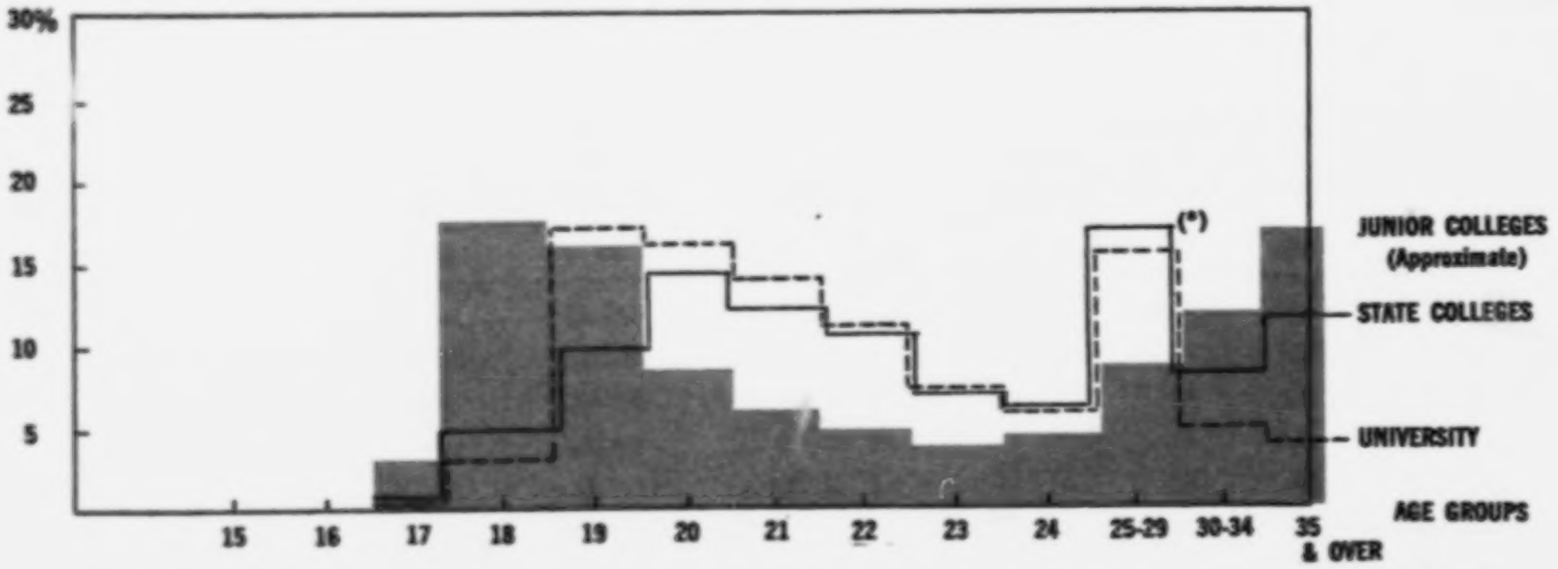
The greatest percentages of junior college students fall in the youngest (18 and 19 years old) and the oldest (35 and over) categories, with very small percentages for the in-between agees. The fact that the junior colleges offer only lower division courses plus adult education explains the bimodal nature of junior college age groups. This junior college pattern is in marked contrast to that of the University, which has few students in the 35-and-over category, the main concentration coming in the 19- through 21-year-old categories.

The state colleges exhibit a pattern which is in between that of the junior colleges and the University for the older age groups. For the 20- through 29-year-old groups, the state college pattern is almost identical to that of the University. For the 19-year-old age group it is the lowest of the three institutions. It should be noted, however, that if University extension students and state college extension students were to be included, the age patterns for the University and state colleges might display the bimodal characteristic of that for the junior colleges.

The relationship of age to credit load is of significance at the state colleges. In general, the older the student, the lighter the study load he carries. For those taking ½ to 6 units, the average age is 31.5 years; for 6½ to 11½ units, 26.2 years; for 12 or more units, 22.2 years.[22] Again, comparable information is not available for the junior colleges, but a similar if not more pronounced relationship might be expected.

Chart 3.10. Percentage of Enrollments by Age Group

Chart 3.10 **PERCENTAGE OF ENROLLMENTS BY AGE GROUP FOR THE UNIVERSITY, STATE COLLEGES, AND PUBLIC JUNIOR COLLEGES OF CALIFORNIA, SPRING 1967**[21]



(*) The graph is "distored" at the 25-29 age group. A "smoother" curve would have been established if data were available for each of the years bracketed in this group.

Socio-Economic Characteristics and Participation Rates

As has long been known, scholastic attainments in high school and, hence, college eligibility are strongly correlated with the educational attainments of parents and also with parents' income. The data developed by the several recent studies confirm and sharpen these relationships. Taking family income and parental educational attainments as indicators of economic and social characteristics, there are clear differences among the students who attend different classes of institutions.

Those California students who attend out-of-state colleges tend, on the average, to be from the more affluent families, from families with higher educational attainments, and tend themselves to have higher educational records and aspirations. Still considering average characteristics, the students who attend the University of California come next after the "out-of-staters" in economic status and in academic abilities, and just ahead of those students who attend private colleges and universities within California. This positioning holds despite the fact that some of the California private institutions are both expensive and highly selective academically. The drawing power of these particular institutions (Stanford, the California Institute of Technology, the Claremont Colleges, etc.) is offset by that of the many private colleges which have markedly lower entrance requirements than does the University and whose total costs, while higher than the University's, are not widely dissimilar. Next in line with respect to average affluence, parental education and average academic attainment come state college students, then junior college students, and finally students who do not go on to higher education.

These correlations are far from absolute; there are poor as well as wealthy students at the University, and wealthy as well as poor students at junior colleges. The discussion must be understood as relating only to average characteristics of a broad spectrum of students and a wide variety of institutions.

Little is known at present as to the nature and importance of the specific factors which go into all the individual decisions to attend college and to attend a particular college. Obviously, the admission standards of the institutions and the systems are important, as are the costs of attending and the location of the possible choices. The advice and decisions of friends and family also appear to be very important, much more important probably than counseling by high school advisors and other adults.

There is also, apparently, a complex of little understood motivational factors which are at work from very early in a student's school career and which shape his plans, expectations, and possibilities through a shaping of what has been termed his "self-image." This is most evident in the case of the large number of students who do not complete high school and have no thought whatsoever of going on to college. In rural areas and in certain urban centers there is little question but that for low-income and minority group students this shaping begins very early and that the school system itself often reinforces other elements in a student's environment which direct him away from higher education.[13]

How many students who might go to college actually do so? Only two sources of statewide information which give partial answers to this important question, the CCHE study and the SCOPE study, are currently available to the Committee. Although these studies are not exactly comparable or free of internal statistical difficulties and biases, the results are sufficiently consistent to be of preliminary value. Some results of the two studies are recapitulated in Table 3.11. Annotations on the differences and sampling problems associated with these efforts can be found in Appendix B. The imprecision and conditional reliability of these estimates must be emphasized.[14]

These two narrow and partially opaque windows to the universe of college participation patterns give the view that 4-8 per cent of the most academically talented high school students do not attend any college at all or, if they do, remain less than an academic year.

The Committee believes that the figures on participation reported from the SCOPE and CCHE studies are unrealistically high in all instances because only half of those questioned replied. If these studies are typical, college-goers will be over-represented among those who respond and thus give a significant, upward bias to the results. Since the statistical procedures used did not include a reconstruction of the total sample to adjust for the characteristics of non-respondents, it is probable that the college attendance rates are high by considerable amounts. For this reason, the Committee has used the figures of 10-15 per cent as a working estimate of the percentage of the most able who do not attend college. With respect to the next most able group, corresponding very roughly to those who are eligible for the state colleges but not for the

Table 3.11 **COLLEGE ATTENDANCE RATES IN RELATION TO MEASURES OF HIGH SCHOOL ACHIEVEMENT**[15]

A. **CCHE STUDY** (1967) High School Graduates)

Percent of Ability Group **Not** Planning to Attend a Post-Secondary Educational Institution:

			SPRING 1967
Top	19%	(Approximately UC Eligible)	8.3%
Next	16%	(Approximately CSC Eligible Only)	25.9
Bottom	65%	(Approximately JC Eligible Only)	41.5

B. **SCOPE DATA** (1966 High School Graduates)

Percent of Ability Group **Not** in Attendance at a Post-Secondary Educational Institution:

	FALL 1966	WINTER 1967	SPRING 1967
Top 25%	3.8%	5.0%	7.6
Next 15%	13.8	16.8	20.2
Bottom 60%	23.4	28.6	36.0

University, the non-participation rates go up markedly, as they do again among those in the group of students who are eligible as freshmen for neither the University nor the state colleges.

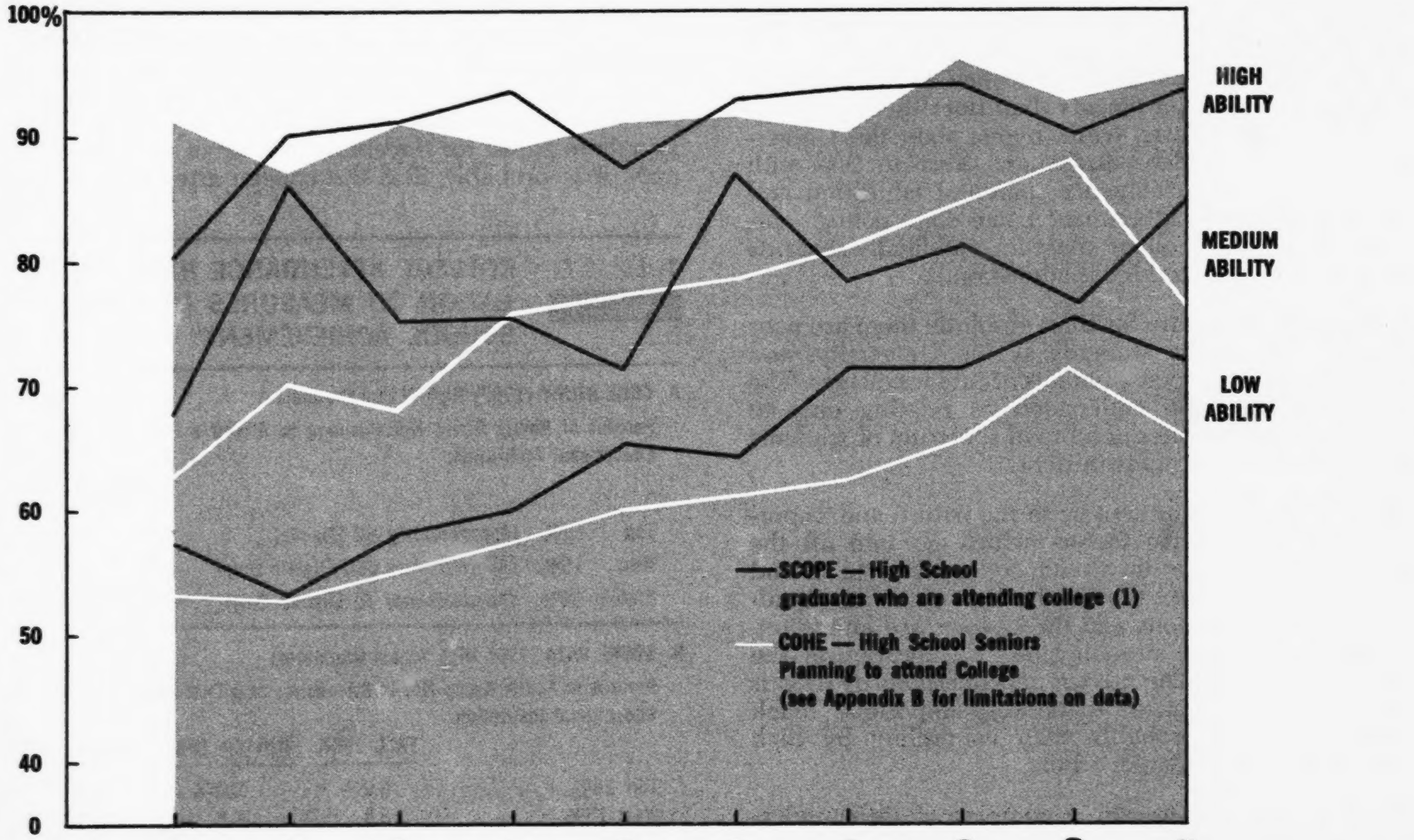
Additional insights into the general relationships between college-going, academic attainment and family income are obtained when the roughly comparable SCOPE and CCHE data are cross-stratified by academic attainment and by income groups. Chart 3.12 plots the percentages of students who attend (or say they plan to attend) as functions of family income. Within each attainment group, college plans and attendance are positively correlated with income. The college-goers in each attainment group report higher parental incomes than those who do not go. It is clear from these limited data that there exists an equivalence between family income and conventional measures of academic promise, in that the better-off but less able students attend college in about the same proportions as the more able but less affluent.

A Measure of Educational Output: Degrees Awarded

Central to any evaluation of California's system of higher education or to any judgments on the size and allocation of higher educational investments is the question of results or outputs. Admittedly, the process of learning and its outputs are singularly difficult to quantify. Still, some measures, however arbitrary, have come to be accepted as generally useful indices of educational activities: enrollments, credit hours, grade points and the like. In similar fashion, the Committee believes that the number of degrees granted may be a useful measure of educational output.

It is at once apparent that the use of data on degrees awarded is fraught with difficulties and limitations. One severe conceptual difficulty lies in the necessity of treating college work short of a degree as though it were of no worth. In using this set of data, a bach-

Chart 3.12 **COLLEGE ATTENDANCE WITH RESPECT TO ABILITY AND FAMILY INCOME IN CALIFORNIA**[16]



This graph shows for each income group the percentage of high school graduates of a given scholastic ability who attended or planned to attend college.

elor's degree is counted, whereas perhaps four years of work which is minus a unit or two of credit is discounted entirely. Another problem lies in the necessity of treating all degrees, regardless of field, as somehow equivalent in quality, content and value to the individual and to society. Despite these difficulties, and recognizing that problems of evaluating college or university work which does not culminate in receipt of a degree continue to be both important and troublesome, the number of degrees granted may be the best single quantitative measure of institutional productivity presently available.

In 1958-59, the public and private four-year colleges and universities in California for which data were available conferred 33,247 degrees of all types (exclusive of the two-year Associate of Arts degree)." By 1965-66, the number of degrees conferred had risen to 57,403, an increase of 72.7 per cent. While the increase in degree production is impressive, it must be compared with the growth in overall educational activity. The increase in total enrollments over the same period for the same California institutions was 77.4 per cent, and the increase in full-time enrollments was 95 per cent.

Table 3.13

DISTRIBUTION OF DEGREES CONFERRED IN CALIFORNIA HIGHER EDUCATION: NUMBER AND PERCENTAGE BY LEVEL AND SEGMENTS, 1958-1959 TO 1965-1966[18]

ACADEMIC YEAR	UNIVERSITY OF CALIFORNIA		STATE COLLEGES		AICCU INSTITUTIONS*				TOTAL	
					CATEGORY I		CATEGORY II			
	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%
					4 YEAR DEGREES					
1965-1966	9795	24%	21533	52%	4204	10%	5740	14%	41272	100%
1964-1965	9258	24	20056	51	4207	11	5334	14	38855	100
1963-1964	8199	24	17258	50	3961	11	5168	15	34586	100
1962-1963	7179	24	14935	50	3759	12	4173	14	30046	100
1961-1962	6647	24	13361	48	3734	13	4274	15	28016	100
1960-1961	6995	26	12019	44	3722	14	4365	16	27101	100
1959-1960	6577	26	11045	44	3621	14	3833	16	25076	100
1958-1959	6879	28	10770	43	3696	15	3502	14	24847	100
					5 - 6 YEAR DEGREES					
1965-1966	4136	35%	3795	32%	2704	23%	1132	10%	11767	100%
1964-1965	3661	33	3109	28	3509	31	887	8	11166	100
1963-1964	3268	33	2730	28	2987	31	766	8	9751	100
1962-1963	2794	33	2407	28	2684	31	656	8	8541	100
1961-1962	2411	31	2283	29	2698	34	467	6	7859	100
1960-1961	2249	32	2060	29	2452	34	363	5	7124	100
1959-1960	1980	30	1911	30	2358	36	261	4	6510	100
1958-1959	1867	31	1668	27	2281	37	273	5	6089	100
					7 + YEAR DEGREES					
1965-1966	2548	58%	1466	34%	1466	34%	350	8%	4364	100%
1964-1965	2118	56	1355	36	1355	36	319	8	3792	100
1963-1964	1827	53	1244	36	1244	36	366	11	3437	100
1962-1963	1610	53	1104	37	1104	37	306	10	3020	100
1961-1962	1406	51	1052	38	1052	38	312	11	2770	100
1960-1961	1318	50	980	38	980	38	317	12	2615	100
1959-1960	1175	50	917	38	917	38	289	12	2381	100
1958-1959	1040	45	966	42	966	42	305	13	2311	100

***Category I Institutions:** those that (a) offer undergraduate liberal arts and other curricula, with grdauate and/or professional schools and (b) grant, as their highest degree, the doctor of philosophy and equivalent degree.

Category II Institutions: all other member institutions.

It should be noted that these are only rough comparisons, which do not take account of the "lag" between enrollment and the receipt of a degree. Enrollment increased yearly over the period from 1958-59 to 1965-66, but the resultant increase in degrees is not apparent for up to 7 or more years after any given enrollment entry (depending upon whether the individual statistic refers to a graduating senior planning no advanced work or an entering freshman planning to continue in school until he receives a medical degree).

Nevertheless, these aggregated findings, and particularly the comparison of the 72 per cent increase in degrees and the 95 per cent increase in full-time students, suggest that as California's system of higher education enrolls increasing numbers of students, the proportion of these students who complete degrees may be declining. It might be said that the system seems to be enrolling students more and graduating them less.

The details, internal differences and alternative statistical explanations behind these aggregated statistics deserve close consideration, for the figures raise major policy issues regarding eligibility requirements, persistence rates, the roles of the various segments of the system and the need for financial assistance to students.

The distribution of degree production among the several segments of California's higher education system over the period 1958-59 to 1965-66 is shown in Table 3.13. It will be noted that the distribution reflects the functional assignments and enrollment allocations of the Master Plan. The shares of four-year degrees produced by the University and the private colleges and universities are declining at roughly the same rate and now stand at 24 per cent each. The state colleges have steadily increased their share of four-year degree production, and now confer a majority (52 per cent) of such degrees.

Both the University and the state colleges are conferring increasing shares of the five- and six-year (master's and some professional) degrees, while the major relative decline in this category takes place among the Class I private colleges and universities (those of university stature). The balance in the conferral of seven-plus year degrees (academic doctorates, law, medical degrees, etc.) has passed from the private universities to the University of California during this period. The University of California conferred 45 per cent of such degrees in 1958-59; by 1965-66 it was conferring 58 per cent.

In total numbers of degrees granted in 1963-64 (this time using the Department of Health, Education, and Welfare classifications for the most recent year available), several California institutions rank significantly high nationally. The University of California (all campuses) ranks second behind City University of New York (all institutions) in four-year degrees, second behind Harvard in first professional degrees, and first in both master's and doctor's degrees conferred. Stanford University ranks nationally thirteenth and fourteenth in the awarding of master's and doctor's degrees, respectively. The University of Southern California ranks fifth nationally in first professional degrees conferred, and eighteenth in master's degrees conferred. A clear indication of the growing role of the state colleges is the fact that two of them are now among the twenty-one top universities and colleges in the entire nation in the conferral of four-year degrees: San Jose State College ranks fourteenth and San Francisco State College twenty-first.

A study recently released by the National Academy of Sciences shows that the Berkeley Campus of the University of California leads the nation in number of academic doctorates awarded from 1960 to 1966, followed by the University of Illinois and the University of Wisconsin. Stanford University is ranked tenth, the Los Angeles campus of the University of California eighteenth and the University of Southern California twenty-sixth.

Despite these impressive national standings, it should be noted that California's total system of higher education lags somewhat when the percentage of total national enrollment attributable to California is compared with the percentage of all degrees awarded attributable to California. As Table 3.14 indicates, California enrolls nearly 12 per cent of the nation's undergraduates but grants only about 8 per cent of the nation's bachelor's and first professional degrees. On the graduate level, California enrolls 14 per cent of the nation's total but grants only 9 per cent of the master's degrees and 10 per cent of the doctor's degrees. The reasons for these apparently lower productivity figures are only partially understood at this time and will be the subject of Committee study during the coming year.

Table 3.14

DEGREES AWARDED BY LEVEL AND TOTAL ENROLLMENTS, CALIFORNIA AS A PERCENTAGE OF THE UNITED STATES, 1958-1959 AND 1963-1964[11]

	DEGREES			ENROLLMENT	
YEAR	AB & 1st PROF.*	MA	Ph.D.	UNDER-GRADUATE	GRADUATE
1958-1959	7.2%	8.1%	9.3%	11.6%	13.0%
1963-1964	7.8	8.7	10.3	12.1	14.4

*First professional degrees comprise 8 per cent of total in 1963-1964.

The ratios of four-year degrees granted to senior class enrollments for the different segments of the state's higher education system are shown in Table 3.15. The productivity of the private colleges is generally slightly better than that of the University of California. The state colleges fall somewhat below the University and the private institutions at the four-year degree level. For the University of California and the private institutions, the data show some improvement in productivity over the base period. In the state colleges, the productivity of degrees falls steadily over the period.

Table 3.15 **RATIOS OF TOTAL SENIOR CLASS ENROLLMENTS TO FOUR-YEAR DEGREES BY SEGMENT, CALIFORNIA HIGHER EDUCATION, 1958-1959 TO 1966-1967**[20]

ACADEMIC YEAR	UNIVERSITY OF CALIFORNIA	CALIFORNIA STATE COLLEGES	AICCU INSTITUTIONS
1966-1967	1.1	1.6	1.0
1965-1966	1.1	1.6	1.1
1964-1965	1.2	1.5	1.1
1963-1964	1.3	1.5	1.0
1962-1963	1.3	1.5	1.2
1961-1962	1.3	1.5	1.1
1960-1961	1.2	1.4	1.2
1959-1960	1.2	1.4	1.2
1958-1959	1.2	1.3	1.2

The distribution of degrees awarded by field of specialization is another important dimension of higher education output.[21] In its second year of study, the Committee plans to give further attention to the adequacy of the numbers and mix of degrees in relation to what is known of the requirements of California for various categories of college-trained manpower.

Student Persistence and Attrition

In its search for clues to the mechanisms behind the apparent decline in ratios of degrees awarded to enrollment, the Committee examined gross unadjusted measures of persistence. These measures, supplied by the State Department of Finance, and based upon both full-time students and total enrollment, are displayed in Table 3.16 in the form of ratios. Enrollment in a class for any given year is shown as a ratio or percent of the enrollment in the appropriate class of a previous year. Thus sophomores are shown as a ratio or percentage of the freshmen enrolled one year prior, while juniors are shown as a percentage of the freshmen enrolled two years prior.

It must be noted that these data do not measure what happens to the students in a single entering class. In this sense, the data fall far short of providing a complete measure of academic persistence in California; this limitation is very important and should be kept in mind in reviewing the data.

The sizes of sophomore classes in one year relative to freshman classes the preceding year have been declining steadily and markedly since 1958-59. These declines are apparent whether all students or only full-time students are counted. At the same time, considering full-time students only, the ratio of juniors to sophomores is increasing markedly. The data for the senior-to-junior ratio are equivocal but suggest relative stability at a high level of about .900 for full-time enrollments, and an even higher figure for total enrollments.

The general implication of this analysis seems to be that attrition is most severe during or just after the first year of college. Attrition rates, while still significant, are far lower between the sophomore and junior years and between the last two undergraduate years of college than they are during and after the first year.

In considering the measures of gross persistence between the sophomore and junior classes, two important factors must be kept in mind. First, for many students the second year of college, particularly of junior col-

Table 3.16 **GROSS PERSISTENCE RATIOS, ALL SEGMENTS OF HIGHER EDUCATION IN CALIFORNIA, 1958-1959 TO 1966-1967, FOR FULL-TIME AND TOTAL ENROLLMENTS**[22]

ACADEMIC YEAR*	SOPHOMORES / FRESHMEN		JUNIORS / FRESHMEN		SENIORS / FRESHMEN		JUNIORS / SOPHOMORES		SENIORS / JUNIORS	
	Full-Time	Total	Full-Time	Total	Full-Time	Total	Full-Time	Total	Full-Time	Total
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1966-1967	.485	.413	.370	.209	.325	.188	.727	.510	.871	.931
1965-1966	.476	.410	.372	.202	.326	.202	.741	.480	.889	.950
1964-1965	.497	.417	.362	.211	.311	.210	.696	.477	.917	1.000
1963-1964	.525	.442	.341	.210	.312	.199	.617	.447	.907	.983
1962-1963	.558	.406	.351	.205	.334	.205	.599	.455	.928	.994
1961-1962	.588	.449	.365	.206	.321	.201	.598	.432	.900	.965
1960-1961	.605	.477	.354	.208	.334	.222	.584	.437	.909	.995
1959-1960	.603	.473	.369	.222	......	......	.543	.404	.926	.953
1958-1959	.672	.550	......	......	......	......	.545	.426	.918	1.040

*The number of enrollments used in the numerator of any ratio is for the academic year shown in column (a). The number of enrollments used in the denominator of each ratio depends upon the class levels in the ratio. Thus in columns (b) and (c) the number of sophomores for any given year is shown as a percentage of the freshmen of the previous academic year. In columns (d) and (e) the number of juniors for any given year is shown as a percentage of the freshmen of two years prior, and so on.

lege, is the expected termination of formal academic training. Secondly, the streach-out phenomenon, mentioned above in connection with age distribution data, may begin at the junior level as students seek work or are forced to work part-time or intermittently to support themselves and their families.

This second point may receive statistical support from the differences in junior/sophomore persistence rates when the base is changed from full-time to total students. When full-time students are considered, the persistence rate starts higher (.545 instead of .426) and increases more sharply than the total student index (to .727 instead of .510). It seems plausible that students able to devote full time to their schooling are also able and motivated to continue with it into the upper division. Issues of policy related to this possible instance of finance-related attrition rates are considered below in Section V in connection with the discussion of student aid programs.

Because of the large and important differences in function and in entrance requirements among the public segments, general impressions derived from aggregated statewide data are by no means sufficient for a comprehension of the variation which exists even at the level of single segments. Accordingly, data on sophomore/freshmen, junior/sophomore, and senior/junior ratios for the junior colleges, the state colleges and the University of California are shown separately in Table 3.17.

Considering first the ratio of sophomores in one year to freshmen in the preceding year for each of the public segments, the Committee found that the statewide pattern of decline was also apparent, but in different degrees, in each of the segments and for both full-time and total enrollments. At the University, the sophomore/freshman ratios are now at about .85, whereas they were more than .95 in 1959-60. Within the state colleges, comparable sophomore/freshmen ratios declined from .8 in the early years of the base period to .6 in the more recent years. A turn upward

Table 3.17 **GROSS PERSISTENCE RATIOS,* PUBLIC HIGHER EDUCATION IN CALIFORNIA BY SEGMENT, 1957-1958 TO 1966-1967, FOR FULL-TIME AND TOTAL ENROLLMENTS"**

ACADEMIC** YEAR	SOPHOMORES / FRESHMEN					
	University		State Colleges		Junior Colleges	
	Full-Time	Total	Full-Time	Total	Full-Time	Total
1966-1967	.867	.812	.753	.793	.357	.339
1965-1966	.824	.770	.609	.630	.397	.343
1964-1965	.686	.669	.620	.663	.394	.356
1963-1964	.810	.815	.670	.721	.406	.372
1962-1963	.884	.885	.659	.699	.441	.399
1961-1962	.829	.874	.726	.772	.468	.370
1960-1961	.954	.939	.758	.800	.471	.390
1959-1960	.959	.953	.809	.870	.467	.386
1958-1959	1.106	1.094	.790	.912	.564	.470
1957-1958	1.025	1.028	.794	.825	.570	N.A.

ACADEMIC** YEAR	JUNIORS / SOPHOMORES				SENIORS / JUNIORS			
	University		State Colleges		University		State Colleges	
	Full-Time	Total	Full-Time	Total	Full-Time	Total	Full-Time	Total
1966-1967	1.574	1.598	1.990	2.202	.709	.727	.952	1.018
1965-1966	1.649	1.657	1.902	2.029	.759	.779	.927	1.004
1964-1965	1.552	1.578	1.702	1.854	.868	.924	.936	1.021
1963-1964	1.124	1.142	1.615	1.847	.909	.964	.885	.997
1962-1963	1.262	1.276	1.516	1.727	.940	.992	.888	.995
1961-1962	1.089	1.261	1.514	1.717	.964	1.036	.834	.928
1960-1961	1.234	1.246	1.530	1.730	.977	1.047	.856	.928
1959-1960	1.170	1.182	1.563	1.837	.985	1.045	.878	.877
1958-1959	1.095	1.103	1.561	2.123	1.000	1.025	.871	1.081
1957-1958	1.136	1.153	1.497	1.610	.960	.998	.899	.935

*These gross ratios must be regarded as only roughly indicative of actual persistence patterns. They are distorted by changes in University and state college entrance requirements for transfer students during the period under study, and they also reflect the Master Plan policy encouraging junior college attendance and subsequent transfer to the University or the state colleges at the beginning of the junior year.

**See footonte to Table 3.16.

in these ratios was manifested in the most recent years for both the University and the state colleges; this turn may be associated with draft deferment policies.

For the junior colleges, in part because of their lower requirements and the fact that many students enroll for curricula which take only one year to complete, the gross attrition rates between the freshman and sophomore years are more striking. The junior colleges have experienced larger declines in already low persistence rates. The sophomore/freshman ratios have declined 37 per cent from .570 to .360 for full-time enrollments and 27 per cent from .470 to .340 for total enrollments. If these declining persistence rates were complemented by increasing rates of transfers from junior to senior colleges, they would be of far less significance. This is not the case. The total number of transfers from junior colleges as a percentage of junior college enrollments has been decreasing over a period where the ratio of vocational to academic students in the junior colleges has been quite stable.

The findings indicate that increases in colleges participation rates have been matched by decreases in the rates at which freshmen have continued with formal education. California's open door to higher education, particularly via the junior colleges, is clearly open in both directions; the flows of freshmen both into and out of the door have been increasing.

Although the policy significance of these flows is discussed below, it should be noted here that drop-outs are a sign of successful system performance if easy access and high participation rates are emphasized as goals of policy. The same drop-out rates may be an indication of inefficiency and of serious system malfunction when policy emphasis is shifted from the process-oriented indices of access and participation to the output-oriented indices of curricula completed and degrees granted.

Table 3.18 **GROSS PERSISTENCE RATIOS, AICCU INSTITUTIONS, 1958-1959 TO 1966-1967, FOR FULL-TIME AND TOTAL ENROLLMENTS**[25]

ACADEMIC YEAR*	SOPHOMORES/FRESHMEN		JUNIORS/SOPHOMORES		SENIORS/JUNIORS		SENIORS/FRESHMEN	
	FULL-TIME	TOTAL	FULL-TIME	TOTAL	FULL-TIME	TOTAL	FULL-TIME	TOTAL
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1966-1967	.852	.842	.913	.920	.887	.926	.730	.786
1965-1966	.903	.887	.947	.951	.961	1.002	.746	.799
1964-1965	.867	.892	.900	.960	.930	1.014	.775	.817
1963-1964	.863	.830	.938	.948	.950	.506	.765	.766
1962-1963	.888	.848	.943	.957	.992	.993	.811	.788
1961-1962	.855	.831	.918	.941	.952	.999	.820	.848
1960-1961	.891	.842	.963	.991	.927	1.086	.781	.923
1959-1960	.892	.856	.982	1.000	.950	1.029	......	......
1958-1959	.857	.848	.973	.981	.907	.994	......	......

*See footnote to Table 3.16.

Persistence ratios for the private sector of higher education in California are considerably higher than those for the public sector. Table 3.18 shows gross persistence ratios for AICCU member colleges and universities from 1958-59 to 1966-67. While the senior-to-freshmen ratio for all California higher education has been around .2 or .3, that for the AICCU institutions has remained at about .8. Just as the open-door policy of the junior colleges results in a showing of lower persistence rates for California public higher education generally, high entrance requirements appear to lead to the high persistence rates in California's private institutions of higher education. Of course, other factors such as motivation and financial ability may also be important in explaining the higher ratios for the private institutions.

At the graduate level different measures of persistence must be used. Unfortunately, there seems to be little data to illuminate changes in graduate level attrition over the base period. The following brief comments are from a single study by the Office of Analytical Studies at the University of California.[24]

This study of graduate attrition suggests that for all University campuses about 40 per cent of the entering graduate students do not complete work for a degree. The data further indicate that this overall measure masks very wide differences among campuses and among fields of study. Since no uniform entrance requirements are imposed upon entering graduate students, and since vastly differing amounts of financial support are available for graduate students in different fields, these variations are not surprising. Because of the very high average unit costs which the University finds to be associated with each graduate student, it is of major importance that more and better data be assembled and analyzed if inefficiencies in the most expensive part of the system are to be detected, diagnosed and reduced.[26]

Trends in Higher Education Finance

Chart 3.20 displays the rates of increase between 1957 and 1967 for seven data series which have been plotted in terms of index numbers based upon 1957-58 = 100. The series and their 1966-67 index values are shown in Table 3.19 below.

Table 3.19 **CALIFORNIA HIGHER EDUCATION ENROLLMENT, DEMOGRAPHIC AND FINANCIAL SERIES, 1966-1967 INDEX VALUE (1957-1958 = 100)**[27]

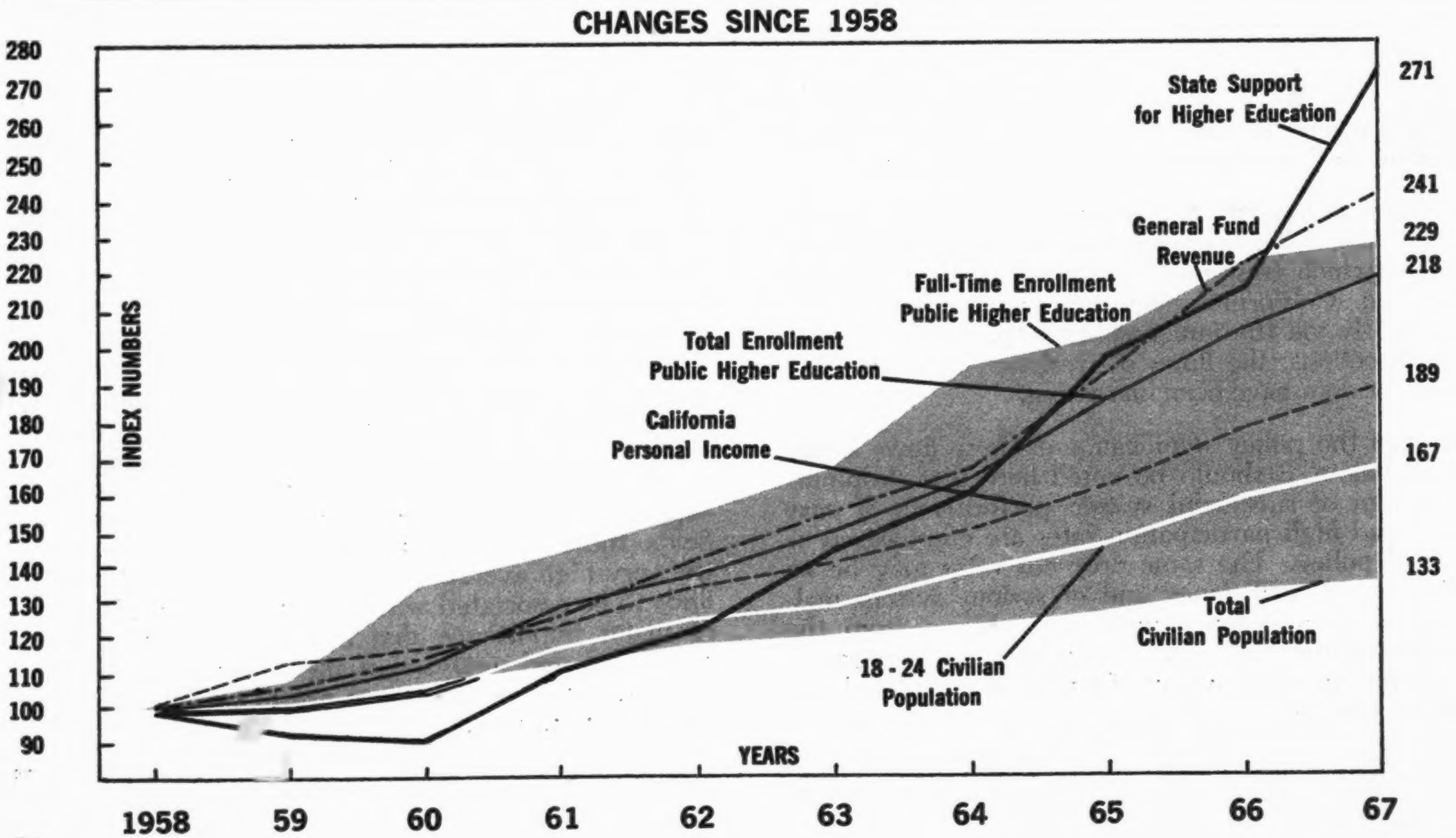
SERIES	INDEX VALUE
1. Total state civilian population	133
2. 18 - 24 age civilian population	167
3. California personal income	189
4. Total enrollment, public higher education	218
5. Full-time enrollment, public higher education	229
6. General Fund revenues	241
7. Total state expenditures for higher education	271

Although collegiate enrollment increased faster than population, so did General Fund revenues. At the cost of an increase (from 13 to 16 per cent over the base period) in the share of General Fund revenues going to higher education (paid for by proportional reductions in the shares going to other state services and activities), there has been until quite recently, a general, parallel growth between general state resources and state expenditures for higher education. The implications of the apparent recent shift in the slope of the higher educational expeditures curve in 1966-67 will be discussed in a later section.

California has a $2.5 billion higher education industry. Expenditures by higher education institutions from state and all other sources have increased from $.5 billion in 1957-58 to over $1.75 billion in 1967. In addition to institutional expenditures, it is necessary to consider the very substantial out-of-pocket expenditures made by students and their families for board, room, lodging, travel, fees, books and other items relating to costs of living while attending college. If the very crude estimate of $2,000 per year is used for average private costs of living and education, roughly another $1 billion can be attributed to the private component of total educational expenditures. That component of the private costs paid in tuition and fees to public and private institutions (about $.25 billion) must be deducted from the additional $1 billion, since it is already reflected in the $1.75 billion of institutional expenditures.

The data summarized in Table 3.21 include both capital and operating expenditures for all institutional purposes including instruction, research, auxiliary enterprises, administration, etc. For the University, special AEC contracts for the operations of the Los

Chart 3.20 **CALIFORNIA HIGHER EDUCATIONAL ENROLLMENT, DEMOGRAPHIC, AND FINANCIAL**[28]



Alamos, Livermore and Lawrence Radiation Laboratories have been excluded, as have been similar installations operated by the AICCU institutions.

Even though every effort was made to make the expenditure totals as complete as possible as an indication of the total magnitude of institutional expenditures, certain resources used for higher educational purposes are not reflected in the table. The value of land holdings and of existing buildings, library collections and equipment acquired prior to the base period are not reflected, nor are the resources tied up in endowments and trusts for the benefit of higher education purposes. Further, the treatment of capital expenditures on a par with operating expenditures introduces certain distortion. If the summary data are understood to provide estimates of the total value of checks written in a year by all colleges and universities rather than estimates of the value of all the resources devoted to higher education, the table is reliable within the limits imposed by differences in accounting and reporting practices.

Despite the year-to-year fluctuations caused by the bunching up of capital outlays from bond funds, several noteworthy regularities and trends emerge from the data in Table 3.21.

Table 3.21 **TOTAL INSTITUTIONAL EXPENDITURES FOR CALIFORNIA HIGHER EDUCATION BY SEGMENT IN MILLIONS OF CURRENT DOLLARS AND PERCENTAGE DISTRIBUTION, 1957-1958 TO 1966-1967"**

ACADEMIC YEAR	UNIVERSITY OF CALIFORNIA		CALIFORNIA STATE COLLEGES		PUBLIC JUNIOR COLLEGES		PUBLIC SECTOR SUB-TOTALS		AICCU INSTITUTIONS		ALL SECTORS TOTALS	
	$	%	$	%	$	%	$	%	$	%	$	%
1966-1967	609	34.7	393	22.4	344	19.6	1,346	76.8	408	23.2	1,754	100.0
1965-1966	544	38.8	203	14.5	296	21.1	1,043	74.4	358	25.6	1,401	100.0
1964-1965	459	38.7	196	16.5	250	21.0	905	76.2	283	23.8	1,188	100.0
1963-1964	402	36.9	168	15.4	235	21.6	805	73.9	284	26.1	1,089	100.0
1962-1963	341	36.6	146	15.7	205	22.0	692	74.3	237	25.6	929	100.0
1961-1962	289	36.8	128	16.3	170	21.7	587	74.8	198	25.2	785	100.0
1960-1961	254	35.4	128	17.9	162	22.6	544	75.9	174	24.1	718	10.0
1959-1960	225	34.9	97	15.1	160	24.7	482	74.7	164	25.4	646	100.0
1958-1959	202	34.1	101	17.0	137	23.1	440	74.2	153	25.8	593	100.0
1957-1958	162	30.1	132	24.6	114	21.3	408	76.0	129	24.0	537	100.0

1. The relative amounts of expenditure of the public and private segments have remained quite constant in a relation of approximately 3:1 since the Master Plan.

2. The University's share of the state total has increased from 30 per cent to 39 per cent, with a drop in the most recent year.

3. The state college share of the total has shown a decline from 17 per cent to 14.5 per cent, with the exception of higher values in the first and last years of the period, due to atypically large capital expenditures.

4. The size of the total expenditures by California junior colleges remained relatively stable, although with a slight downward trend in recent years.

Table 3.22 plots the percentage of state funds from all sources appropriated in each year to each of the public segments. It can be noted that despite atypical years at the beginning and end of the base period and the fluctuations noted above, a rough proportionality has been maintained in recent years in the region of a 50: 38: 12 distribution of state funds for the University, the state colleges, and the junior colleges.

It also appears that despite the substantial annual increase in state support for the state colleges and the University, state support has declined as a share of the total resources used by each of these two systems. Table 3.23 summarizes these shifts in the percentage contribution of state funds to the total resources expended by each public segment. It should be noted that the composition of the nonstate share is mostly local property tax, federal aid and miscellaneous district income in the case of the junior colleges, fees and auxiliary enterprise income in the case of the state colleges, and quite a varied set of federal, private, and student-derived sources in the case of the University.

While the data series are irregular, there seems to be a gradually reduced dependence upon state sources by the University. The same trend is more marked and more regular in the case of the state colleges. For each system, however, the absolute dollar amount of state support has increased. The relative share of junior college expenditures supplied from local tax sources has been declining while that from state sources has been increasing. It is tempting to conjecture that diversity of funding sources may accompany and be a sign of increasing institutional maturity. Alternatively, a reduced dependence upon state support may merely reflect the growth of activities and services which are outside the normal scope of state funding. In considering the gross and highly aggregated statistics summarized in the last three tables, it must be remembered that there were changes in what the institutions did over the base period as well as in the amount of money they received and in the relative importance of their sources of funds. These changes were not independent.

A brief discussion of present unit cost data and related technical problems may be found in Appendix B.[illegible]

Table 3.22 **PERCENTAGE DISTRIBUTION OF ALL STATE FUNDS AMONG PUBLIC SEGMENTS OF CALIFORNIA HIGHER EDUCATION, 1957-1958 TO 1966-1967**[illegible]

ACADEMIC YEAR	UNIVERSITY OF CALIFORNIA	CALIFORNIA STATE COLLEGES	PUBLIC JUNIOR COLLEGES
1966-1967	43.2%	43.8%	13.0%
1965-1966	53.7	31.1	15.2
1964-1965	52.9	34.8	12.2
1963-1964	53.0	35.7	11.3
1962-1963	53.2	35.9	10.9
1961-1962	53.0	36.9	10.2
1960-1961	53.8	36.5	9.7
1959-1960	50.2	38.4	11.4
1958-1959	48.4	41.0	10.6
1957-1958	41.3	49.7	8.9
Period Average	50.3%	38.4%	11.3%

Table 3.23 **STATE AND LOCAL FUNDS AS A PERCENTAGE OF THE TOTAL EXPENDITURES BY THE PUBLIC SEGMENTS OF HIGHER EDUCATION IN CALIFORNIA, 1957-1958 TO 1966-1967**[illegible]

ACADEMIC YEAR	UNIVERSITY OF CALIFORNIA	CALIFORNIA STATE COLLEGES	JUNIOR COLLEGES*	
			STATE	LOCAL
1966-1967	48.4%	76.1%	25.6%	51.7%
1965-1966	53.5	83.2	27.7	53.2
1964-1965	56.4	86.8	24.0	53.7
1963-1964	53.5	86.5	19.6	46.5
1962-1963	55.3	87.1	18.8	52.4
1961-1962	55.6	87.1	18.2	58.2
1960-1961	58.8	78.6	16.5	57.8
1959-1960	50.6	89.7	16.2	55.0
1958-1959	54.8	93.1	17.8	60.7
1957-1958	64.6	95.3	19.7	65.2

*Local funds come primarily from property taxes. In addition to state and local funds, junior colleges have available the revenues from auxiliary enterprises, student fees, and miscellaneous income.

Stability and Change Since the Master Plan

Although major changes which have occurred in higher education in California since the enactment of the Master Plan have been discussed above, it is useful to summarize those which seem most noteworthy and most pervasive.

> Enrollments have increased in all segments, driven by the combined and highly leveraged effects of increasing population, increasing college-age population and higher overall participation rates.
>
> The proportions of students at introductory and graduate levels have increased in relation to those at the middle levels (upper division).
>
> As participation rates have increased, persistence rates through college have declined in all three public segments, with attrition being particularly concentrated within and between the first two years of college. Appreciable individual and social losses may be associated with these attrition rates.
>
> Although California's production of graduate and undergraduate degrees has increased in relation to national totals, degree production has not grown as fast as enrollment.
>
> Levels of expenditure by all classes of institutions and from all revenue sources have increased markedly and far faster than enrollments.
>
> The share of the state General Fund going to higher education has increased.
>
> State monies are a declining component of the revenues employed by the University and the state colleges, but an increasing fraction of those used by the junior colleges.

In contrast to these impressive and varied aspects of change, the California educational scene has also been characterized by some remarkable stabilities.

> Each segment has maintained approximately the share of the state's total enrollments which it had prior to the 1960 Master Plan, although with some shifts in the "mix" of class levels.
>
> The share of the total institutional expenditures by each segment has also remained quite stable over the base period.
>
> The rank order of expenditures per student which characterized each segment in the late 50's has been preserved over the period and remains in direct relationship to measures of the academic ability of the students who attend each segment. The better the student, the more state funds (on the average) spent on him. This proportioning of average expenditures to ability measures must be regarded as a major economic and philosophical premise of the Master Plan.
>
> With some exceptions, the distribution of educational functions and kinds of activities has re-

mained quite stable, as was intended by the Master Plan and its custodian, the Coordinating Council for Higher Education.

While the following generalization is vulnerable in minor ways, the Committee is persuaded that the stabilities which have characterized higher education in California have been concentrated among those relationships which were agreed upon by institutional representatives in 1959. Segmented sharing of functions, of the market for students, and of the total of institutional resources are the major cases in point. With the perspective of almost a decade, it seems clear that one effect of the Master Plan legislation and of the subsequent operations of the Coordinating Council for Higher Education was generally to stabilize, regulate and protect the position enjoyed by each segment of higher education in 1957-58.

Over a decade of substantial enrollment increases, California has enjoyed the advantages of a political treaty and a truce among systems of institutions which might otherwise have competed more openly and more aggressively for status, for students and for financial support. The buffering and appellate functions of the Coordinating Council, which so far have received executive and legislative support, might be likened to the peace-keeping forces of the United Nations, which depend for their success both on the forebearance of potential belligerants and on the implicit backing of the major powers.

On the other hand, the Master Plan and its custodians must be held responsible in part for some of the weaknesses which we have noted here and in following sections: a complacency with regard to declining persistence rates and continuing problems of access, the absence of effective statewide (not just systemwide) planning and the postponement of an explicit analysis of possible contributions of the state's system of higher education to the larger social and developmental objectives of the state.

4. The Next Five Years

During the five years from 1967-68 to 1971-72, if present trends and policies continue, total enrollment in California's public colleges and universities will increase from 803,000 to nearly 1.1 million students. Total state support for current expense and capital outlay, based upon the expected requests of the several public segments, will climb from $663 million to more than $1.2 billion. The budgets of the University of California, the California State Colleges, and the public junior colleges will, in total, exceed $2 billion annually. California's private colleges and universities, by 1972, will enroll some 110,000 students, and their annual budgets will total more than $700 million.

These figures are presented as "base case" projections of higher education in California for the period 1968-1972. This section will explain why the base case projections were made and will outline the assumptions that underlie the projections. Detailed projections for each of the four segments of California's higher education system may be found in Appendix E.

"Base Case" Projections

Public policy should be evaluated from two standpoints: its visible effects upon present-day conditions and its probable effects in the future. The most reliable means of anticipating future effects is the projection of existing trends, and of known decisions and pressures acting upon these trends, into some future period of time. This projection of the *status quo* or "base case" then provides a guideline for evaluating the effects of possible policy changes against what is likely to result in the absence of any changes. In this section of the progress report, the Committee presents base case projections for the next five years; in the following section, the Committee discusses certain policy alternatives, the effects of which may be measured in the light of present policies and trends*

This methodology is similar to that used in the preparation of the 1960 Master Plan for Higher Education, except for the time interval utilized. The Master Plan Survey Team made projections for the period from 1960 to 1975, whereas the Committee has so far limited its projections to a five-year period. One reason for this choice of interval is the Committee's conviction that projected trends may be so altered by interim events and decisions as to render fifteen-year projections largely conjectural and of slight reliability. The Committee has accordingly decided to concentrate its efforts for the time being on short-term projections, postponing what may be less productive long-term forecasts.

Table 4.1, which compares Master Plan enrollment projections made in 1959 with actual values and with some preliminary estimates, illustrates the problem, although the Master Plan projections may yet prove to be remarkably accurate.

Table 4.1 **COMPARISON OF PROJECTED AND ACTUAL FULL-TIME ENROLLMENT IN ALL PUBLIC SEGMENTS OF HIGHER EDUCATION, 1960 TO 1972***

DATA SOURCE	1960	1965	1970	1972
Master Plan Modified Projections	224,750	338,100	463,350	528,875
Actual Enrollment	203,064	363,457	——	——
Joint Committee Preliminary Projections	——	——	488,500	567,500

The base case projections appearing in this chapter are built upon a number of assumptions, all of them related to the fundamental assumption that the next five years will be much like the past ten.* This is a generally realistic as well as a methodologically useful assumption, since data series of the past ten years have been reasonably stable.*

---

*The projections in this section were developed prior to the time when the new 1968-69 budgets were available from the public segments. Accordingly, there may be data entries for 1968-69 which do not exactly match institutional requests. It is not expected that such differences will be large or that they will affect the general findings of this section, or the policy implications considered in Section V. Changes of significant magnitude, however, might be implied by the treatment of segmental requests in the Governor's budget.

*The projections are always subject to revision if conditions or policies change suddenly. One such change has just occurred which is not reflected in these projections: the more stringent limitations on the selective service deferment of graduate students. These new regulations will clearly reduce graduate enrollments over the next several years, although the magnitude of the reduction is not yet evident.

The Projections in Summary

The message of the Committee's projections is that the enrollments in public higher education in 1972 will be nearly 160 per cent of enrollments in 1966, that state support for higher education, as projected by the institutions, will be 225 per cent of that in 1966, and that General Fund revenues in 1972 will probably be around 200 per cent of 1966 revenues, assuming no further changes in the tax structure.[illegible] These data are given in detail in Table 4.2; data for 1965-1966 are actual, 1966-1967 data are estimated or budgeted, and data for subsequent years projected. In addition, Table 4.2 shows the series as index numbers with 1966 equal to 100. The index numbers are presented graphically in Chart 4.3.

The most interesting feature of these data is the relation between the projected state support for higher education and projected General Fund revenue. The revenue series shows the effects of the recent tax increases, and the support series shows the effects of the limitations on state expenditures for 1967-1968. State support increases faster than enrollment: the average amount of state support per full-time student in all public segments will increase in current dollars from $1,500 per year in 1966 to about $2,000 in 1972. Enrollments increase faster than either total civilian population or civilian population aged 18 to 24.

The relationship between projected General Fund revenues and projected state support for higher education is worth close attention. In analyzing the following material, it should be remembered that state support includes monies from all state sources, including bond funds. The projection of General Fund revenues until 1971-72 is an uncertain and difficult matter, since there has been little experience with the effects of the recent changes to the state tax structure. However, the Legislative Analyst has prepared estimates of the revenues for 1967-1968 and 1968-1969.[illegible] These estimates indicate that the 1967 tax bill (SB 556) will generally add about $1 billion to the existing stream of revenues; rather than changing the slope of the revenue curve as a function of time, the tax bill shifts the curve upwards, maintaining the same slope. Following this reasoning, the Committee has made projections of revenues for 1969-70 to 1971-72 based upon the revenue projections published by the Joint Legislative Budget Committee in May 1964. The

Table 4.2 **PROJECTIONS AND INDEX NUMBERS OF POPULATION, PERSONAL INCOME, HIGHER EDUCATION ENROLLMENTS, GENERAL FUND REVENUES, AND STATE SUPPORT FOR HIGHER EDUCATION 1966-1972**[illegible]

	Total Civilian Population (d) (000)	Civilian Population Aged 18-24 (d) (000)	Total Enrollment in Public Higher Education	Full-Time Enrollment in Public Higher Education (e)	General Fund Revenues (millions)	State Support For Public Higher Education (millions)
1965-1966 (a)	18,417	1,762	692,370	363,457	$2,509	$ 542
1966-1967 (b)	18,792	1,882	741,355	390,994	2,268	682
1967-1968 (c)	19,185	1,986	803,227	419,700	3,532	663
1968-1969	19,662	2,108	878,358	458,800	3,890	872
1969-1970	20,154	2,233	930,130	488,500	4,300	1,000
1970-1971	21,365	2,369	1,005,571	527,300	4,600	1,093
1971-1972	21,947	2,518	1,089,696	567,500	4,900	1,217

SERIES EXPRESSED AS INDEX NUMBERS—1966 = 100

	Total Civilian Population	Civilian Population Aged 18-24	Total Enrollment in Public Higher Education	Full-Time Enrollment in Public Higher Education	General Fund Revenues	State Support For Public Higher Education
1965-1966	100	100	100	100	100	100
1966-1967	102	106	107	108	105	126
1967-1968	104	113	116	115	141	122
1968-1969	107	120	127	126	155	161
1969-1970	109	126	134	135	171	186
1970-1971	116	134	145	145	183	202
1971-1972	119	143	157	156	195	225

(a) Actual
(b) Estimated or budgeted
(c) Projected (1967-1968 through 1971-1972)
(d) These columns are based on the calendar year coinciding with second half of the fiscal year.
(e) Full-time enrollments were projected as an assumed function of total enrollments, and so no inferences should be drawn about the relationships of these two curves. For details of the functional relationship, see Appendix D.

Budget Committee offered three projections: low, medium, and high estimates. The high estimates, when inflated, are reasonably close to the actual revenues of the past two years. This inflated high series of projections for 1969-70 to 1971-72 was then increased by a $1 billion figure taken from the recent work of the Analyst and finally rounded to the nearest hundred million.

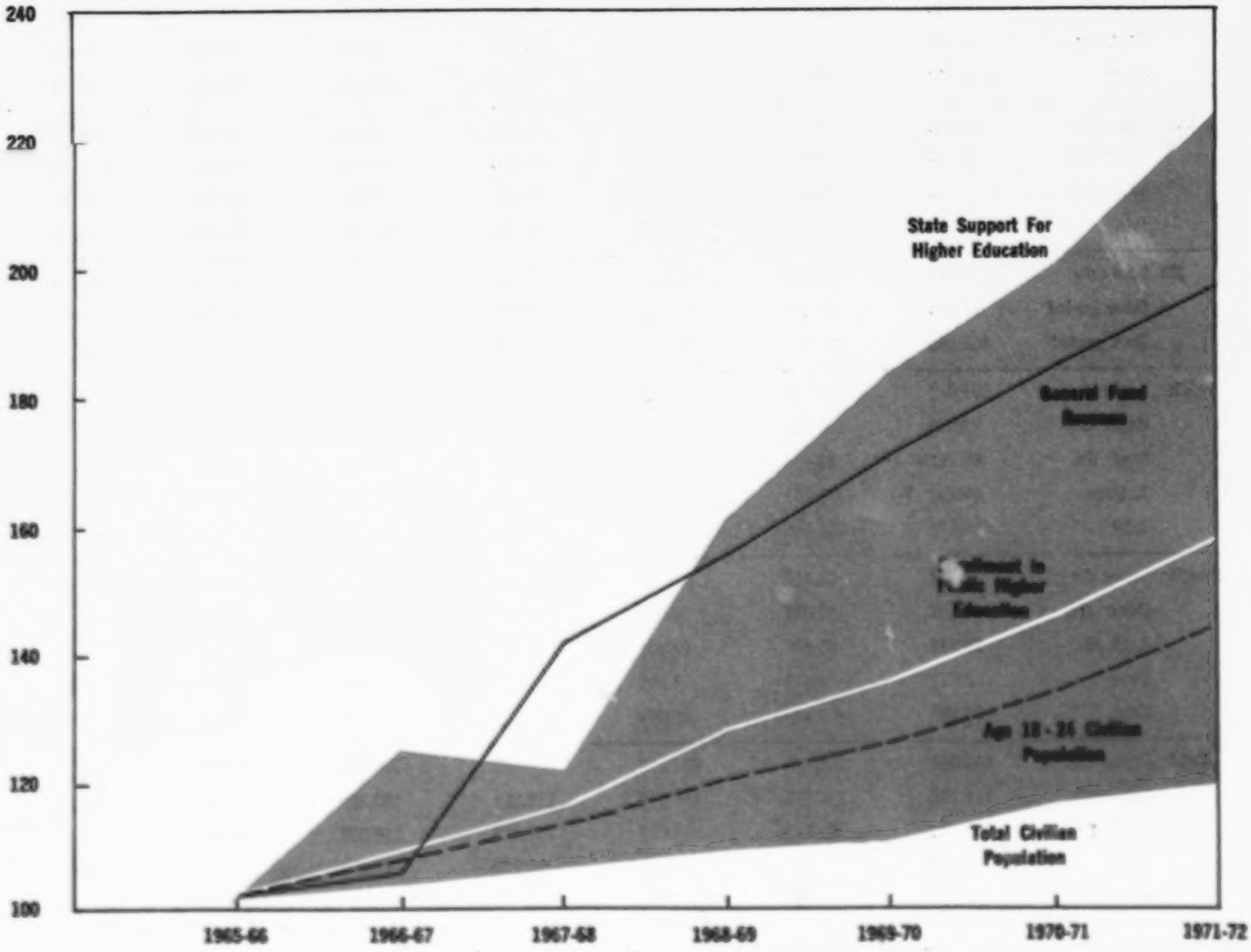
The Committee has also gathered projections of state support for higher education for the next five years. The sources of these data are discussed in Appendix E, but in general they represent the budgeted support for 1967-68 and the proposed systemwide requests for the remainder of the period. These requests, of course, have not been tested by detailed scrutiny in the Department of Finance and the Legislature. The results of the negotiations between the institutions and the Departmetn of Finance over the 1968-69 requests were not known to the Committee when this was prepared. If the requests are very substantially reduced, a new lower trend may be set for state support for higher education.

The issue of whether expenditures will outrun revenues is not only affected by the projections used but by what year is taken to be normal. In Table 4.2, by comparing changes from 1965-66, the fiscal year was assumed to be a good base. The table indicates that the growth rate of state expenditures for higher education will exceed the growth rate of revenues in 1968-69. If the support and revenues for 1957-58 are taken as the base, then the lines do not cross until 1971-72.[30]

In either case the projected increase in support for higher education relative to revenues raises an obvious and well-known issue: should revenues rise to meet desired expenditures, or should expenditures be limited to a proportion of the revenues projected? There is no simple answer to this question, but additional information about the future of higher education as it is currently projected may clarify the issue.

The projected enrollments in all of California's institutions of higher education are given in Table 4.4. The rate of increase projected for all segments is about the

Chart 4.3 **INDEX NUMBERS FOR SERIES IN TABLE 4.2 1966-1972[31]**
(1966 = 100)



same, with 1971-72 enrollments about 1½ times those in 1965-66. This growth rate produces a huge absolute increase from 772,000 in 1965-66 in all institutions to 1,199,000 in 1971-72. The projections for the public institutions are either from the Department of Finance or are the combined work of the Department and the respective institutions; the projection for the private sector is by the Committee. They show the results of population increase and of increasing participation rates. These projections are, of course, grounded upon the present admissions policy which permits any high school graduate to go to some public college.

While the increase in enrollments is fairly uniform for all segments, the increase in projected expenditure by the public institutions is by no means uniform, as may be seen from the data in Table 4.5. The 1971-72 junior college expenditures are expected to be about two-thirds more than those in 1965-66, while the University's budget is expected to double and the state colleges hope to triple their budgets. Extrapolations of past expenditure trends in the private schools indicate that these institutions may well double their expenditures.

The detailed projections for each of the four segments may be found in Appendix E. It must be remembered that the data are a combination of projections, predictions, hopes and best guesses. Many things, including decisions by the Governor and the Legislature, may happen to make the future different from the past. Section V will consider some of the policy alternatives which could significantly alter the future size and contour of higher education as portrayed by this base case.

Table 4.4 **ACTUAL AND PROJECTED TOTAL ENROLLMENT* FOR ALL SEGMENTS, 1966 TO 1972***

SEGMENTS AND LEVELS		1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72
UC:	Lower div.	26,276	27,050	27,973	28,499	29,853	30,387	30,477
	Upper div.	26,905	30,445	33,028	35,088	36,526	37,970	39,133
	Grad. div.	24,862	26,882	29,528	32,171	35,451	38,414	41,586
	Total	78,043	84,377	90,529	95,758	101,830	106,771	111,196
CSC:	Lower div.	48,093	48,650	50,250	52,650	55,550	58,950	62,600
	Upper div.	70,645	81,306	91,400	98,000	104,250	110,400	115,900
	Grad. div.	36,189	39,564	42,350	46,050	49,400	51,850	54,900
	Total	154,927	169,520	184,000	196,700	209,200	221,200	233,400
JC:	Lower div.	432,644	458,097	497,500	552,000	582,000	637,000	701,000
	Other graded	26,756	29,361	31,200	33,900	37,100	40,600	44,100
	Total graded	459,400	487,458	528,700	585,900	619,100	677,600	745,100
Public:	Lower div.	507,013	533,797	575,723	633,149	667,403	726,337	794,077
	Upper div.	97,550	111,751	124,428	133,088	140,776	148,370	155,033
	Grad. div.	61,051	66,446	71,878	78,221	84,851	90,264	96,486
	JC Other	26,756	29,361	31,200	33,900	37,100	40,600	44,100
	Total	692,370	741,355	803,229	878,358	930,130	1,005,571	1,089,696
Private:	Lower div.	29,853	30,449	32,156	33,956	35,858	37,865	39,986
	Upper div.	22,198	22,924	24,051	25,305	26,624	28,011	29,470
	Grad. div.	25,234	26,201	27,751	29,398	31,241	33,197	35,276
	Other	2,822	3,852	4,141	4,372	4,519	4,668	4,820
	Total	80,107	83,426	88,099	93,031	98,242	103,741	109,552
Total:	Lower div.	536,866	564,246	607,879	667,105	703,261	764,202	834,063
	Upper div.	119,748	134,675	148,479	158,393	167,400	176,381	184,503
	Grad. div.	86,285	92,647	99,629	107,619	116,092	123,461	131,762
	Other	29,578	33,213	35,341	38,272	41,619	45,268	48,920
	Total	772,477	824,781	891,328	971,389	1,028,372	1,109,312	1,199,248

*All enrollments are fall semester enrollments except those for the University, which are annual averages.

Table 4.5 ACTUAL AND PROJECTED EXPENDITURES FOR ALL SEGMENTS, 1966 TO 1972"

(millions of dollars)

SEGMENTS & BUDGETS	1965-1966	1966-1967	1967-1967	1968-1969	1969-1970	1970-1071	1971-1972
University of California							
Operating	$425	$509	$557	$644	$716	$782	$881
State	208	243	251	316	339	363	399
Capital	119	100	113	166	199	216	176
State	83	52	57	78	111	100	103
Total budget	544	609	670	810	915	998	1,057
State share	291	295	308	394	450	463	502
State Colleges							
Operating	173	220	239	322	398	455	525
State	139	179	191	257	318	364	420
Capital	30	173	102	167	167	198	218
State	30	120	62	101	101	118	132
Total budget	203	393	341	489	565	653	743
State share	169	299	253	358	419	482	552
Junior Colleges							
Operating	237	270	307	337	362	396	443
State	56	70	83	94	105	119	134
Capital	60	24	44	52	60	65	65
State	26	8	20	25	27	29	29
Total budget	297	294	351	389	422	461	508
State share	82	78	103	119	132	148	163
Total Public							
Operating	835	999	1,103	1,303	1,476	1,633	1,849
State	403	492	525	667	762	846	954
Capital	209	297	259	385	426	479	459
State	139	180	138	205	238	247	264
Total budget	1,043	1,296	1,360	1,688	1,902	2,112	2,308
State share	542	672	663	872	1,000	1,093	1,218
Private Institutions							
Operating	275	319	365	418	479	548	628
Capital	84	89	78	88	96	105	115
Total	359	408	443	506	575	653	742
Total Higher Ed.							
Operating	1,110	1,318	1,468	1,721	1,955	2,181	2,477
Capital	293	386	337	473	522	584	574
Total	1,403	1,704	1,805	2,194	2,477	2,765	3,051

5. Policy Options

The larger portion of this section is devoted to policy alternatives in the field of educational finance and in particular to tuition and specific alternatives to it. Preliminary and less extended treatment is given policy issues respecting student financial aid, constitutional revision and educational organization and governance.

Financing Public Higher Education

The level of state support for public higher education has recently pulled ahead of the growth in the state's General Fund resources (see Table 3.19). The share of the General Fund allocated to higher education has increased from approximately 13 per cent in 1958-59 to 16 per cent in 1966-67. According to the state support projections for the next five years indicated in the University's "Long Range Fiscal Program" and by Committee projections of state college and junior college expenditures, this trend will continue. The projected rate of growth of General Fund expenditures for higher education, as indicated in Table 4.2, is 1.3 times the extrapolated growth rate for General Fund revenues through 1972-73. It is too soon to assess accurately the fiscal situation for 1968-69, but if these conjectures for future years prove to be correct, the problem posed by these diverging rates of growth must receive careful attention.

Other states are encountering similar problems with rising costs of higher education, and there are indications that the federal government may at some point undertake a much more extensive role in financial support of the nation's colleges and universities. But whether this may occur in the next five years is unknown. And when and if massive federal aid does begin, it is logical to assume that such aid will go first to states and institutions whose quality is far below those of California. The Committee therefore does not consider that federal aid will provide major or proximate answers to the state's problems of financing higher education.

There are five basic courses open to the Legislature and the Governor in dealing with this problem:

1. General Fund revenues might be increased by any one of a variety of devices to provide either a temporary increase in available support for education or to alter the growth rate of the General Fund to bring it more in line with projected expenditures. This response is applicable as well to budget pressures from other state activities which are supported from the General Fund and which have growth rates which are greater than the General Fund revenue growth rate. This remedy is, therefore, primarily a matter of basic tax and budgetary policy rather than higher education finance. Nevertheless, any policy decision in this regard will necessarily have ramifications for higher education and is therefore relevant to the Committee's studies.
2. General Fund allocations could continue to be altered in favor of higher education. This again is a matter of general state policy which requires a broader perspective than that of higher education alone, but which is nonetheless relevant to the problem of financing higher education.
3. The financial resources specifically allocated to higher education could be expanded from sources other than the General Fund, either by augmenting those funds which are generated within the system itself or by earmarking external fund sources for the support of higher education.
5. Finally, the productive efficiency of higher education might be increased in ways which do not require, or require less extensive, reductions in quality or service to the populations served. By and large this means developing more efficient methods and tools for instruction in order to reduce the salary component of teaching costs, since these are the heart of enrollment-related operating costs.

Broad questions of tax and budgetary policy extend beyond the Committee's responsibility, and major increases in technological efficiency are not realistically to be expected in the short-range future; therefore, the following discussion will deal primarily with the two main alternatives of increasing internal revenue or reducing expenditures.

REDUCTIONS IN PROJECTED EXPENDITURES

Reductions in current and projected expenditures for public higher education may be sought in three basic and non-exclusive ways.

1. By reducing the number of students for whom public higher education is made available. (For convenience, this alternative and others will be discussed as if other relevant circumstances were to be held constant.) Such a reduction of enrollments or further rationing of education could be accomplished directly by pricing policies, en-

trance requirements, grading and probation policies or combinations of such measures. These devices are applicable "across the board," or they could be applied selectively and in different ways within each sector.

2. By reducing whatever is meant by the quality of instruction if, by so doing at a given budget level, additional students could be served who would not otherwise obtain instruction of *any* quality. This might be accomplished, for example, by reducing the applicable faculty-student ratios or the balance of senior and junior faculty members. These kinds of changes, while not explicitly adopted for the purpose of reducing public expenditures, are often made by the institutions themselves when faced with the need to ration scarce resources.

3. By reducing the diversity of activities or changing the mix of activities in ways which lower the total cost. The projected state costs associated with the new University medical schools at Davis and San Diego increase over the 1968-72 period from $12 million to $40 million. The five-year average is $20 million per year. These sums represent on the average approximately 5 per cent of the state support component of the University's budget. It should also be noted that the $14 million average operating expense component of these sums is roughly 40 per cent of the $25 million in revenues which might be expected from a $250 additional annual tuition charge on all University students.

Although the very substantial capital and operating costs associated with medical and related instruction and research make a good example of how cuts or postponements in single program categories might contribute to the elimination or reduction of a projected gap in resources, many other programs, such as agricultural research and extension, could equally well be cited. The Committee has no current position regarding the particular merits of any single method of expenditure reduction.

INCREASES IN REVENUES FOR HIGHER EDUCATION: THE PRINCIPAL ALTERNATIVES

Clearly, the language of ACA 16 (1967 Session) required the Committee to look not only at tuition itself as a means of financing higher education but also at the alternative sources of funds which might be utilized for the support of higher education. In order to evaluate the feasibility and desirability of tuition or a comparable increase in other student charges, it must be weighed against other potential sources of revenue in terms of equity, potential yield, collateral effects, feasibility and general acceptability. Accordingly, the following pages first present a discussion of tuition and then a discussion of alternative sources of funds.

1. TUITION

The following discussion regarding tuition presents first a brief history of recent proposals, followed by a listing and analysis of the principal objectives which have been associated with the imposition of tuition and a review of present student costs.

Recent Tuition Proposals

The question as to whether a charge for tuition should be imposed at California's public institutions of higher education has been before the Legislature repeatedly. Bills to establish a deferred tuition plan have been introduced at each session of the Legislature since 1963. The Subcommittee on Higher Education of the Assembly Committee on Education held a public hearing in late 1965 on tuition and issued a lengthy report of its findings. The Legislative Analyst has discussed the issue in connection with his Analysis of the Budget Bill in 1965 and 1967. The matter has been debated more than once during the past few years by the Regents of the University of California, the Trustees of the California State Colleges, and the Coordinating Council for Higher Education.

The issue came to the forefront, however, with the submission of the Governor's Budget for 1967-68 on January 31, 1967. For the first time the Governor's budgets for the University of California and the California State Colleges both incorporated a substantial deduction in General Fund support to be made up from tuition charges. Although no specific level of tuition was indicated, tuition income in the amount of $20 million for the University and $18 million for the state colleges was to be used to permit corresponding reductions in General Fund contributions. This income was not earmarked for any specific purpose but was to be combined with other current income to meet the budgeted current operating expense.

When the Governor's "modified budget" was presented in March 1967, all references to tuition had been deleted. In the period between the submission of the initial budget and submission of the modified budget, the Administration determined to postpone the imposition of tuition for one year, largely as a result of the fact that the University Regents, meeting in February, had voted to defer any decision to charge tuition for University students on the grounds that it was then too late to impose tuition for the fall of 1967 without creating serious problems for the students.

However, as a consequence of the Governor's initial proposal and subsequent discussions in and out of the Legislature, language was added to Assembly Concurrent Resolution No. 16 of the 1967 Session to direct the Joint Committee on Higher Education to include the matter of tuition in its studies and to report to the 1968 Session. In response to this directive, the Committee conducted two one-day public hearings in October 1967, to gain certain factual information and to explore aspects of the matter of particular interest to Committee members, as well as to record the viewpoints of interested agencies and organizations. Through its research director, it also contracted for a technical study of the economic costs and benefits of higher education for individuals and for the state. This study by Professors Hansen and Weisbrod has been published under separate cover and is summarized in Section VI of this report. In addition, the Committee developed certain supplementary material, including a simulation model for estimating the enrollment and cost changes which might result from various increases in student charges. The characteristics of this model are described in some detail in Section VI and in Appendix D.

A Summary and Evaluation of Tuition Objectives

There is a wide variety of reasons for considering the imposition of tuition for California's public institutions of higher education. They range from the simple objective of making additional funds available for the support of higher education to the purpose of punishing students for the demonstrations and disorder which have occurred on some campuses in recent years. It is assumed, however, that consideration of tuition as a form of punishment, or even as a means for making students place greater value upon their education, is beyond the scope of this discussion.

Accordingly, the following list summarizes what appear to be the principal objectives, singly or in combination, of the various tuition proposals which have recently been put forward:

1. *To provide additional support funds for public higher education;*
2. *To substitute for and thus reduce General Fund appropriations for higher education;*
3. *To increase private contributions to the cost of higher education relative to public support;*
4. *To divert students from one system to another;*
5. *To aid indirectly the private colleges and universities by reducing the price difference between private and public schools;*
6. *To reduce the enrollment of students with low motivation; and*
7. *To improve access to college for students from low-income families by using tuition revenues for student aid.*

In many ways these seven objectives overlap one another; nevertheless, it is useful to examine them one by one to determine exactly what each means and to what extent it can, in fact, be achieved by the imposition of tuition or a comparable increase in other student charges.

1. To provide additional funds for the support of higher education

The first objective, to raise additional funds for the support of higher education, is the most clear-cut and direct. If expenditures cannot be reduced and taxes cannot be increased, it is evident that an increase in student charges is a possible solution to the problem of meeting the rapidly increasing financial needs of higher education. In addition to providing an initial increase in support funds, tuition would have a built-in growth factor responsive to enrollment-based workload increases.

One application of the tuition simulation model described in Appendix D produced the estimate that a $100 annual tuition increase in each of the three public segments would generate a total net reduction in costs which would permit a reallocation of General Fund support on the order of $80 million dollars per year over the next five years. This net figure includes the estimated savings in support and capital outlay as a result of reduced enrollment as well as increased revenue from the tuition charge. It assumes a very large reduction in junior college enrollment.

If higher education is thought to be primarily a voluntary means of raising an individual's subsequent earning power, and with little or no social consequences, there is clear justification for instituting a user fee or a user tax to raise additional funds. The principal question respecting these arguments is whether the imposition of tuition is the most equitable and efficient means of achieving this objective. Tuition, although levied against students and justified as a payment against their future earnings, is actually paid in most cases, from the present earnings or savings of the students' parents. Although it is the student, not his family, who is expected to reap the subsequent benefits in increased income, the ability to pay tuition, at least for undergraduates, is usually estimated in relation to current family income.

In the absence of a student aid program which is highly sensitive to ability to pay, a flat tuition charge becomes a very regressive form of taxation and cannot be claimed to bring any improvement to the existing tax system. It is questionable, in fact, whether a student aid system can be devised which will accurately offset the regressive character of a flat tuition charge, and it is doubtful that a combination of tuition and student aid can be devised that is as equitable or as efficient in this regard as is the present state income tax. This weakness can be partially overcome by devising a system of graduated payments, but the more effective such a system becomes the more difficult it will be to administer and the less justification there will be for tuition as an alternative to the income tax.

Nevertheless, tuition in any moderate amount will provide additional funds for higher education, and this is clearly the basic reason for considering tuition, whatever the supporting line of argument.

2. To reduce General Fund costs

Instead of providing additional support funds, tuition may be used to reduce General Fund expenditures for higher education and to provide additional funds for other state programs. Some advocates of tuition for public higher education state that their support is contingent upon retaining the revenue raised by tuition within each system rather than allowing it to go first to the state's General Fund for subsequent appropriation along with other revenues. However, this may be a difference in form and not in substance. It makes little difference whether General Fund support is reduced first, in anticipation of increased funds from student charges, or whether such funds are collected for the General Fund and then appropriated. If the purpose is to reduce General Fund costs, it can be accomplished either way. Even if tuition revenues are initially retained by the systems to support new programs or higher levels of service, it would be very difficult to maintain that distinction in the future.

3. To increase the private contribution to support costs

Regardless of whether additional support funds are required, it may be argued that the private contribution to the cost of higher education has been permitted to lag behind the growth in public tax contributions to the extent that private benefits are not adequately reflected by the present level of private contributions. This argument again depends heavily on the assumption that higher education is primarily a matter of individual investment for future gain. Those who take this approach often hold that public tax expenditures for the support of higher education are a form of subsidy to the individuals who are chosen to benefit from this system and that, accordingly, the subsidy to such individuals should be no greater than the amount that can be recovered subsequently by the state through its tax system.

Certainly, higher education does produce, on the average, direct returns to the individual in terms of increased lifetime income, although the amount of this extra return, when discounted to its present value, has been estimated at only about $21,000 for a four-year degree (see Section VI). It is also evident that our present state tax structure does not recover the full cost of the subsidy to the individual from that individual's tax payments in California. Hansen and Weisbrod suggest that only about 20 per cent or less of the cost of a college graduate's education will be recovered by the state from taxes on the student's increased lifetime earnings. Assuming that these estimates are roughly accurate, there remains the question as to how much of the cost should be recovered from the individual's tax payments and how much should be recovered from general tax sources to reflect the widespread indirect benefits. No satisfactory answer to this question has been suggested as yet by economists.

If student charges in the form of tuition or other fees are to be used arbitrarily to make up for this supposed deficiency in our tax system, then it is quite clear that such charges are indeed a surtax on higher education. If this policy is to be carried out, tuition payments might be increased to the point at which they will cover all costs which will not be recovered subsequently from an individual's tax payments.

Because of these and other difficulties, an alternative method of analysis is often employed. This is to compare current benefits with current tax payments by the families of students. In this way it has been argued by some that because the current state tax structure is somewhat regressive at the lower income levels, while students tend to come mainly from higher income families, those with low incomes support a disproportionately high share of the cost.

This case has never been very strong, but it has been further weakened by data prepared by the Legislative Analyst in response to a request by the Committee. The Analyst's figures indicate that when University and state college enrollments by income level are compared with state tax payments by income level, enrollments (benefits) correspond fairly closely with taxes paid at income levels up to $25,000 per year. Above that level taxes paid far outweigh enrollment. These figures are by no means conclusive; they would be more useful if tax payments by families with college-age children could be isolated. Nevertheless, in the absence of better data, they effectively refute the contention that low-income families carry a share of the cost of higher education disproportionate to the benefits they receive directly through college enrollment.

Finally, and in respect to arguments for tuition based on a preferred proportion between public and privately borne educational costs, it must be noted that, if such private costs as foregone income, out of pocket school expenses and board and room are included in the total of educational costs under consideration, the private component is now considerably larger than the public component. The definitional apparatus and arithmetic behind this line of argument are provided at length in Section 6.

4. *To divert students from one system to another*

The imposition of tuition at the University and the state colleges would very likely result in the diversion of some lower division students to the junior colleges or out of the system entirely. If the charge were high enough, $500 per year or more, it might sufficiently narrow the gap between the cost of attending a private and a public institution to encourage some middle-income students to make the extra financial effort to attend a private college. According to testimony before the Committee, the Administration expects a substantial diversion of sudents from public to private institutions to occur as a result of its tuition plan.

If the difference in the quality of education between high-cost and low-cost institutions of a comparable character is thought to be large, then it is evident that such differences will become more important for qualified students as price differentials are reduced (and less important as price differentials are increased). If, on the other hand, differences in quality are not thought to be great, a reduction in price differentials will have little effect on college selection (and increases in price differentials may have a very significant impact). Accordingly, those who believe that the quality of education is noticeably better at the private colleges and universities to result in a significant shift in enrollment to private institutions, although limited by their several capacities, admissions policies, and other factors.

Whatever are one's judgments on the relative merits of, say, UC Santa Barbara and Pomona, it is difficult to justify the use of student charges as a means of redirecting students among the public segments of higher education or between the public and private segments. The Committee believes that, insofar as possible, college selection should be related to academic ability, professional interests, and other educationally relevant criteria, rather than ability to pay.

5. *To provide indirect aid to private colleges and universities*

Despite the foregoing, it is often argued that private institutions, which must attempt to recover a large portion of their costs through tuition, cannot compete for students with tuition-free public institutions. In the words of Allan Cartter,

> ". . . over the last ten years . . . under the pressure of rapidly rising costs and a relative decline in the contribution of private gifts and endowment income, on the one side, and the willingness of the state legislatures to absorb a larger proportion of the total costs of public colleges on the other, the price ratio has now risen to more than two to one."[8]

The result, he believes, is inevitable. "You cannot continue to sell on one street corner what is being given away further down the street."

This may in some way describe conditions in those eastern states where private institutions have been unable to match endowment income to cost increases and have found it possible to put part of the blame on an expaning public system of higher education. There is little reason to believe, however, that this is an important factor in California. Although the private colleges have dropped slightly in the percentage of full-time undergraduates which they enroll, this is not because of absolute losses but because they have adopted a somewhat lower rate of growth than the public institutions. When questioned by the Committee as to the effect of the absence of a tuition charge at the University and state colleges on private institutions, the Association of Independent California Colleges and Universities replied that the absence of tuition has had little effect upon its member institutions.[illegible]

If student charges at the University, state colleges and junior colleges were increased so as to narrow the price gap between private and public institutions and to enable the private institutions further to increase their tuition rates, it is likely that the result would be a diversion of students from all institutions, or at least from full-time to part-time status, rather than from public to private institutions. The obvious and logical way to aid California's private colleges and universities is not by indirect measures such as public tuition or increases in state scholarships but by direct subventions to those institutions under applicable planning and budgetary procedures. This matter is discussed in more detail below in the portion of this section dealing with possible constitutional revisions.

6. *To reduce the number of students in public institutions who have a low degree of motivation*

The figures given earlier in this report indicate that while California's public institutions appear to attract a very high proportion of high school graduates, they also exhibit very high drop-out rates. The result is that their output in terms of graduates and earned degrees is disproportionately low. If this combination of high entry rates and high drop-out rates is determined to be a problem which should be reduced or eliminated, one obvious method for doing so would be to raise the price of college attendance to some point roughly calculated to weed out a substantial number of students with insufficient motivation. Obviously this would be a crude tool because there is slight correlation between motivation, even very broadly defined, and financial ability, but it might achieve its objective in some very rough way.

This approach is related to the concept that students will better appreciate their education if they are required to make a greater financial contribution. Stated either way, it may have broader acceptance than is usually acknowledged; nevertheless, the notion that financial ability is a valid criterion for admission to college is totally at odds with current concepts of the purpose and value of higher education. Whatever the merits of student charges for other purposes, they cannot be condoned as a means for selecting who shall and who shall not be admissible to California's public colleges and campuses.

7. *To improve access for low-income students*

Recently nearly all proposals to impose tuition or otherwise raise student charges have also provided an increase in student aid which is intended to improve access to public higher education for students from minority groups and low-income families. The two elements, tuition and student aid, have become so intermingled that it is sometimes difficult to make clear that they are two quite different matters rather than opposite sides of the same coin.

Unquestionably, if tuition is imposed it will be desirable to attempt to offset the impact on students from low-income families by, in effect, returning their payments to them through increased student aid or tuition waivers. But the objective of improving access for students who do not now attend college is an entirely different matter. If additional student aid funds are needed, such funds might come from many sources; tuition is not the only way to provide funds for this purpose nor necessarily the best. In other words, the merits of a tuition or fee increase cannot be debated in terms of the specific uses (student aid or any other) which might be made of the money collected.

Moreover, it is far from clear that a large increase in student aid would result in a substantial immediate increase in enrollment among low-income students. There is strong evidence that other factors are of more immediate importance in this regard and that a large-scale student aid augmentation would not have a significant short-term impact on the enrollment of students from low-income families and minority groups. However, if an aid program were devised which would without question substantially increase enrollment, then provision would have to be made for financing the additional capital outlay and operating costs which such growth would entail.

Current Student Financial Contributions to Higher Education

Students who are residents of California and are enrolled either in the California State Colleges or in the University of California now pay three types of fees: incidental fees, student activities fees and auxiliary service fees. (Only at the University's Schools of Medicine, Pharmacy and Dentistry are residents required to pay tuition.) The incidental fee, called a materials and services fee at the state colleges, is intended to cover the cost of expendable instructional supplies, student health services, placement services and other services which are not directly related to the instructional program. Student activities fees are intended to cover the costs of athletic and other extracurricular activities undertaken by student organizations and the cost of providing student union facilities. Auxiliary service fees are charged for the use of parking facilities, residence halls and residence hall dining facilities.

University fees are established by the Regents in accordance with the powers granted them by the Constitution. State college fees are set by the Trustees under the terms of section 23751 of the Education Code. The public junior colleges are required by statute to levy a nonresident tuition charge equivalent to the average district cost per student for the last actual year, as determined by the State Board of Education. The junior colleges are also authorized under section

25425 of the Education Code to levy fees to cover parking or health services, or both, up to a total of $10 per year. Few junior colleges use this authority. Current fee levels are shown in Table 5.1.

Table 5.1 **CURRENT ANNUAL STUDENT CHARGES FOR UNDERGRADUATES, BY SEGMENT, CALIFORNIA PUBLIC HIGHER EDUCATION, 1967-68**[a]

STUDENT CHARGES	UC	CSC	JC
Incidental fee	$219	$90	$——
Student organization fees			
Student activity fee	11-25	10-20	——
Student union fee	11-24	2-12	——
Auxiliary service fees			
Parking	50	26	——
Room and board	920	620-880	——
Other			
Aplication fee	10	10	——
Non-resident tuition	981	981	330

Any student charge may be called a fee, and certainly the name of the fee makes little difference to those who must pay it. However, according to the 1960 Master Plan, there is an important distinction between tuition and incidental fees in that tuition is defined as "student charges for teaching expenses," whereas incidental fees are "charges to students, either collectively or individually, for services not directly related to instruction, such as health, special clinical services, job placement, housing, recreation." This is a useful distinction when determining the amount of the fee and the purpose for which the funds are to be spent. The distinction is blurred, however, by the fact that portions of University and state college incidental fees are used to provide instructional supplies. It is also noteworthy that the Regents at their meeting in August 1967 were able to vote down a tuition charge and then to endorse in principle an increase in the incidental fee for what appears to be exactly the same purpose. The budgeted expenditure of incidental fee income for the state colleges and the University are shown in Table 5.2. It is evident from these figures that the two systems do not utilize fee income for quite the same purposes.

Student fees do not, of course, constitute the whole of student costs of attending college. Mandatory fees, which now average approximately $250 per year for University students and $100 for state college students, represent only a part of the estimated total average cost of $1,850 for University students and $1,750 for state college students for 1967-68. (Recent surveys indicate that these figures may be as much as $200 to $300 below actual average student expenditures.)

There are two ways of computing total student costs. One is simply to add all direct expenditures such as fees, transportation, room and board, books and supplies, etc. This is the kind of statement of costs usually found in college catalogs. The estimated average costs for University attendance for a single undergraduate California resident living in a residence hall are shown in Table 5.3. These are the "out-of-pocket" expenditures which families usually consider. The comparable figure of $1,750 for the state colleges has not been broken down in this fashion but would be about the same except for the fee amounts.

Table 5.2 **BUDGETED DISTRIBUTION OF INCIDENTAL FEE INCOME, UNIVERSITY OF CALIFORNIA AND CALIFORNIA STATE COLLEGES, 1967-1968**[a]

BUDGETED EXPENDITURES	UNIVERSITY OF CALIFORNIA		CALIFORNIA STATE COLLEGES	
	AMOUNT	%	AMOUNT	%
Instructional materials	$2,444,634	12%	$4,326,350	34%
Audiovisual services	——	——	227,225	1
Arts, lectures and cultural programs	836,901	4	——	——
Student health services	6,072,256	31	3,132,973	25
Counseling and testing	922,601	5	2,497,358	20
Educational placement	339,803	2	——	——
Student and alumni placement	743,668	4	1,013,185	8
Activities and housing services	1,746,729	9	1,023,427	8
Student loan administration	——	——	294,403	2
Foreign student advisors	——	——	258,039	2
Intercollegiate athletics	1,124,091	6	——	——
Recreational activities	1,110,939	6	——	——
Reserves, unallocated and miscellaneous	1,522,540	8	——	——
Capital outlay for student facilities and debt service	2,698,840	13	——	——
Total	$19,563,602	100%	$12,772,960	100%

Table 5.3 **ESTIMATED COSTS OF ATTENDANCE, UNIVERSITY OF CALIFORNIA***

COST ITEMS	AMOUNT
Incidental fee	$219
Student association fee	11
Student union fee	12
Books and supplies	150
Room and board	920
Residence hall membership	24
Supplemental room and board	64
Transportation and miscellaneous	450
Total	$1,850

A different approach, one which is used by economists and by low-income families, is to consider foregone earnings as part of the costs of college-going. This approach results in a higher estimate of total cost because of the magnitude of estimated foregone earnings. Inasmuch as full-time college attendance normally precludes full-time employment, it results in at least a temporary or partial loss of potential income to the student. (It also results in at least a temporary loss of output for society.) The amount of foregone income depends upon many factors; figures of $2,000 per year for the average lower division student and $4,000 for upper division students have been suggested by Hansen and Weisbrod.

When foregone earnings are included, total direct costs cannot be used because some of these costs would be experienced by the individual if he were employed and would be covered by his income. Therefore, only those costs are included which are clearly the added costs of attending college, such as fees, books and supplies and increased (away from home) board and room costs. Table 5.4 indicates the estimated total of these costs plus foregone earnings for a single lower division student living in a residence hall.

Table 5.4 **TOTAL COST OF LOWER DIVISION ATTENDANCE BY SEGMENT, CALIFORNIA PUBLIC HIGHER EDUCATION***

COST ITEMS	UC	CSC	JC
Student fees	$250	$100	$....
Books and supplies	150	150	150
Additional room, board and transportation	500	450	......
Foregone earnings	2,000	2,000	2,000
	$2,900	$2,700	$2,150

It should be noted that the added costs of attending college are "added" only in comparison to staying inactively at home. These costs have their counterparts in the costs of commuting to employment, costs of a business rather than a campus wardrobe, differential insurance or bonding costs, etc. The implicit base of comparison used here probably overweights the private, incremental costs of education which in fact may be lower than all but the least active alternatives.

Foregone earnings may represent only a temporary loss to the individual and, in some cases, his family, but they nevertheless, as Hansen and Weisbrod point out, constitute a real financial sacrifice. In all probability foregone earnings are a more important factor in the college-going decision for students from low-income families than for those from middle-income families. It is also probable, of course, that these earnings will be recovered eventually by the college graduate, just as he will recover the direct expenses noted earlier, but they still represent a cost to him while he is attending college. This fact is quite apparent in the decision of many students, in areas where jobs are available, to combine part-time work with part-time study so as not to sacrific income altogether.

According to figures reported by the Coordinating Council for Higher Education (Table 5.5), private institutions are substantially more expensive for students, in most cases, than are the public institutions.

Table 5.5 **COMPARISON OF AVERAGE DIRECT STUDENT COSTS—UNDERGRADUATES***

	LIVING AT HOME	LIVING AT COLLEGE
Junior Colleges	$1000	$1600
University of California	1200	1700
State Colleges	1400	1850
Private Institutions	2495	3011

The principal difference, of course, is in student charges. Other expenses (or, alternatively, other additional costs plus foregone earnings) are approximately the same or slightly less for students at private institutions, but tuition among the private institutions ranges from $1500 to $2000 as compared with total fees of $150 to $250 for state college and University students.

Estimated Student Resources

The Coordinating Council for Higher Education has also reported that total average income for full-time University students in 1967 was $2289. Of this amount, about 46 per cent was proveded by the families of students, 20 per cent from earnings of the student (and, if married, his spouse), 11 per cent from student aid, 20 per cent from student savings, and only 7 per cent from financial aid. Other data reported by the Council indicate a different picture with a much larger family contribution and less reliance upon student earnings and savings.

Whichever of these two sets of figures more accurately describes the average student, it is evident that the family contribution is the elastic element in the student support equation. At the low end of the family income scale the average family contribution goes as low as approximately $500 for both University and state college students. At the upper levels of family income the family contribution increases to $1200-$1400, offsetting reductions in student earnings and financial aid, with little rise in total student income.

Table 5.6 AVERAGE STUDENT INCOME BY SOURCE, UNIVERSITY OF CALIFORNIA AND CALIFORNIA STATE COLLEGE STUDENTS, 1967**

	UNIVERSITY		STATE COLLEGES	
	AVERAGE	PERCENT	AVERAGE	PERCENT
Family	$1,050	45.9%	$509	27.4%
Spouse earnings	147	6.4	217	11.7
Student savings	468	20.5	394	21.2
Scholarships, grants	156	6.8	59	3.2
Campus employment	75	3.2	69	3.7
Off-campus employment	237	10.4	410	22.1
Student loans	93	4.1	77	4.1
Other	63	2.7	85	4.6
Total	$2,289	100.0	$1,820	100.0

*For University undergraduates and state college students (graduates and undergraduates) carrying 12 or more units.

2. ALTERNATIVE SOURCES OF ADDITIONAL FUNDS FOR HIGHER EDUCATION

If additional funds are needed for the support of public higher education, either to finance specific new programs or as general support for workload growth and program augmentations, all reasonable alternatives for raising such funds must be considered. A proposal to impose tuition must be carefully compared in terms of potential yield, equity, feasibility, collateral effects, etc. with a number of other ways of increasing available support for higher education." For this reason, the following discussion deals with several possible alternatives to tuition as a means of increasing support funds. In some cases it is impossible to determine exactly what the income potential is, but the Committee is convinced that each of these alternatives should be examined closely.

University Endowment Funds

The most conspicuous alternative to an increase in student charges for the University of California is the greater utilization of endowment funds. The term greater utilization is used here in two distinct and separable senses: first, that more of the total earnings on endowments (dividends, interest and appreciation) be used for current purposes, and, second, that higher earnings be sought aggressively through improved portfolio management.

According to the Auditor General's recent study of University finances, endowment funds, including unrestricted receipts which have been classified by the Regents as endowment funds, have increased 25 per cent in the two-year period from June 30, 1965, to June 30, 1967. The Auditor General states that "apparently no policy has been established relative to the size of the endowments that the University, a public institution, may accumulate." University financial reports emphasize the continuing growth of endowment funds with little reference to the use of the funds, as if growth alone were an appropriate objective. Tables 5.7, 5.8 and 5.9 indicate the growth in endowments and funds treated as endowments over the past five years, the amount of income made available for current expenditures, and the purposes for which those amounts have been allocated.

There are three major special funds utilized by the Regents: the Opportunity Fund, the Nuclear Science Fund and the University Fund. All three are treated as endowment funds and included within endowment fund totals. Unlike other endowments, however, the greater part of current income to these funds comes from federal payments for the indirect costs of grants and contracts. In 1966-67 a total of $11,595,000 was gained from this source. Such payments are expected to amount to $13,026,500 in 1967-68.

For 1967-68 the Regents were required to fund a portion of the University's budget from these special funds. To do so, the Regents agreed to draw down existing special fund balances and shift to a current basis, rather than accumulating federal overhead payments during the year for allocation in the following year. As a consequence of these decisions, total allocations from these special funds increased from $15,172,451 in 1966-67 to $36,148,918 for 1967-68. Total special fund balances are expected to fall from $25.5 million on June 30, 1967, to $10 million on June 30, 1968. Obviously, this cannot be done twice with the same funds, but this does not mean that the special funds and other funds treated as endowments cannot be used to provide essential budget support in the future. Although the picture is not entirely clear at this point, the University should have at least $7 million in uncommitted funds available in 1968-69 from federal overhead payments. In addition, without disturbing the principal of other endowment funds, as much as $5 million to $6 million should be available from investment earnings, the net gain from investment transactions and temporary cash investments.

A careful review of policy regarding appreciation is also appropriate. The Auditor General's figures indicate a very substantial dollar appreciation, even under current investment practices. The continued accumu-

Table 5.7 UNIVERSITY OF CALIFORNIA ENDOWMENTS AND INCOME TRANSFERRED TO CURRENT FUNDS* ($000)

ENDOWMENTS	1962-1963	1963-1964	1964-1965	1965-1966	1966-1967
Book Value	$142,187	$152,873	$165,803	$190,789	$207,816
Market Value	194,241	204,391	221,165	218,609	259,794
INCOME TO CURRENT FUNDS:					
Appropriations to current funds	$1,413	$3,448	$3,008	$5,245	$5,491
Investment earnings	3,204	2,660	4,102	3,987	5,629
Total	$4,617	$6,108	$7,110	$9,232	$11,120

Table 5.8 CHANGES IN ENDOWMENT FUND BALANCE, UNIVERSITY OF CALIFORNIA 1965-1966 AND 1966-1967*

	1965-1966	1966-1967
Balances, beginning of year	$165,803,000	$190,789,000
Additions:		
Gifts	11,504,000	6,425,000
Investment income	2,861,000	3,760,000
Net gain on sales of investments	3,421,000	938,000
Deposits (agency funds)	481,000	150,000
Other additions	52,000	48,000
Transfers from current funds:		
Grant and contract indirect cost recovery	12,049,000	11,595,000
Income from temporary cash investments	1,609,000	1,634,000
Other transfers	495,000	389,000
Total	$32,472,000	$24,937,000
Deductions — transfers to:		
Current funds — appropriations for current expenditures	5,245,000	5,491,000
Plant funds	1,343,000	1,692,000
Loan funds	898,000	727,000
Total	$7,486,000	$7,910,000
Balance, end of year	$190,789,000	$207,816,000

lation of endowment funds through appreciation means the continued postponement of the benefit which might be derived from these funds without disturbing the corpus of the original gift or grant.

Moreover, there is evidence that the recent rate of appreciation could be substantially improved. The Auditor General's study found that the rate of return on endowment fund investments in common stocks was somewhat lower for several recent years than would have been obtained had the Regents invested, in effect, in the Dow-Jones or Standard and Poor average. The same study also reported that the 3.89 per cent yield upon the market value of the University General Endowment Pool for 1965-66 placed the rate of return twenty-sixth among 64 university endowment funds studied by the Boston Fund. If the market value of common stocks held over this period had increased, the combination of appreciation and dividends might have produced a more impressive total rate of return. Instead, the portfolio declined or made small gains in market value in the same years that the Dow-Jones average and the more inclusive Standard and Poor Index remained stable or made appreciable gains.

Improved rates of return, altered policies respecting the reinvestment of income and the use of unrestricted gifts for current expenditures could in combination make available for university purposes sums of the same magnitude as the various tuition proposals are expected to produce. Without prejudice to whatever decisions the Regents might reach on these issues, it does seem relevant to ask for whom the endowments

Table 5.9 CURRENT EXPENDITURES OF INCOME FROM UNIVERSITY OF CALIFORNIA ENDOWMENT FUNDS BY FUNCTION**

	1963-1964	1964-1965	1965-1966	1966-1967
Instruction and Departmental Research	$890,000	$1,110,000	$1,275,000	$1,679,000
Extension and Public Service	188,000	295,000	367,000	442,000
Organized Activities — Educational Departments:				
Hospitals and Clinics	59,000	33,000	54,000	65,000
Other	8,000	3,000	6,000	6,000
Organized Research	2,277,000	2,352,000	3,145,000	4,174,000
Libraries	712,000	897,000	1,156,000	946,000
Student Services	67,000	47,000	51,000	94,000
Student Aids	1,469,000	1,686,000	2,538,000	2,845,000
Maintenance and Operation of Plant	46,000	31,000	17,000	21,000
Staff Benefits	12,000	12,000	18,000	6,000
General Administration	88,000	149,000	139,000	235,000
Institutional Services and General	329,000	296,000	466,000	598,000
Auxiliary Enterprises	2,000	——	——	9,000
Total	$6,108,000	$7,111,000	$9,232,000	$11,120,000

*Included are expenditures of funds from the Opportunity, Nuclear Science, and University Funds approved for current use. Regents' loans and appropriations for capital outlay purposes from these funds are not included. Regents' loans outstanding at June 30, 1967, total $28,217,000; $27,787,000 of which is comprised of loans outstanding from the Opportunity, Nuclear Science, and University Funds.

are being increased, and on what basis the students and taxpayers of this generation are judged less important and less worthy beneficiaries of University holdings than those of subsequent generations.

Traditional policies which result in the addition of endowment fund earnings to existing funds and the steady growth of such funds have begun to be challenged at several leading institutions. The Committee believes that the Regents should take a careful look at their policies with regard to the management and use of endowment funds before deciding upon a further increase in student fees.

Private Gifts and Foundation Grants

Private gifts from individuals, firms and other organizations constitute a second potential source of additional funds for the support of the University and state colleges. There is reason to believe that neither the University nor the state colleges have begun to exploit this source fully. The University does, of course, receive substantial grants from private foundations.

As indicated in Table 5.10, the University of California has reported a total of $28,897,666 in gifts for 1966-67, of which $4,908,670 is for universitywide purposes and the balance for the individual campuses. Individuals contributed $11,218,153 or 39 per cent of this, including $1.6 million from alumni and $9.6 million from other individuals. Corporations provided $2,349,305 (8 per cent), and associations $4,131,332 (14 per cent). Grants from private foundations amounted to $11,198,876 (39 per cent).

Table 5.10 **GIFTS AND PRIVATE FOUNDATION GRANTS RECEIVED BY THE UNIVERSITY OF CALIFORNIA 1960-61 TO 1966-67"**

FISCAL YEAR	TOTAL UNIVERSITY GIFTS
1966-67	$28,897,666
1965-66	26,428,875
1965-65	26,441,152
1962-63	20,339,444
1963-64	16,116,746
1961-62	11,523,667
1960-61	15,953,502

A report prepared by the California State Colleges for the Coordinating Council for Higher Education indicates that they received only $967,217 in 1965-66 and $898,000 in 1966-67 from gifts, grants and bequests from non-governmental sources. The purposes for which University and state college gifts and private grants have been allocated are indicated in Table 5.11.

The figures for the University appear large in comparison with those for the state colleges, but, when compared with other major institutions, and keeping in mind that the University is not one but nine campuses, its level of private gifts and grants seems mediocre at best. Single institutions such as Harvard, Yale, Chicago, Cornell and Stanford receive nearly as much or more than all branches of the University of California. One reason for this appears to be a University policy, first adopted by the Regents in 1958, to the effect that the University "shall limit its fund-rasing effort to its 'immediate family,' that is, alumni, faculty, students, possibly parents, friends geographically and sentimentally attached to various campuses, and corporations and foundations interested in the University and desiring to utilize the University's facilities." It is further provided that the University ". . . shall not embark on widespread public solicitations." This restrictive policy appears to be unique among major public institutions according to the University's own statements. The purpose, of course, is to avoid interference with the fund-raising activities of the private colleges and universities which are more heavily dependent upon fund rasing for their support.

Table 5.11 **INTENDED PURPOSES OF GIFTS AND PRIVATE GRANTS TO THE UNIVERSITY OF CALIFORNIA AND CALIFORNIA STATE COLLEGES, 1966-67"**

PURPOSE	STATE COLLEGES	UNIVERSITY
Organized research	$76,602	$11,318,841
Student welfare	448,036	5,545,617
Instruction	142,133	230,139
Libraries and collections	61,865	1,969,648
Campus improvements	27,548	3,049,238
Special & miscellaneous	86,763	6,784,183
Totals	$897,844	$28,897,666

This policy needs to be considered carefully. It may well be that the University could substantially expand its fund-raising activities without in any way endangering financial support for the private institutions. Quite possibly, as a consequence of the University's restraint, much potential private support for higher education in California is being lost to all segments. A more aggressive effort by the University might well serve as a stimulus to gift giving generally, with the result that the private institutions would benefit as well. These possibilities need to be explored by the University; in all probability, the only way to measure the potential for private support is to experiment with a more aggressive fund-raising program for several years.

Much the same is true of the California State Colleges, except that the evidence suggests that they have scracely begun to probe the possibility for support from private sources. Until they do begin to make a significant effort, it is impossible to determine just what the potential is.

Other Internal Sources

There are several other sources of potential income about which less information is currently available but which also deserve careful study. One of these, in the case of the University, is the area of public services and extension. Another source, again for the University, has to do with the whole murky area of reserves, ending balances and actual current income, matters which are not at all clearly presented in University financial reports.

With regard to public service and extension, the University's financial report for 1966-67 indicates total expenditures of $36.4 million. The University's budget indicates expenditures of approximately $24 million for University Extension and Agricultural Extension plus $1.3 million for support of publications, conferences, museums and miscellaneous facilities and activities. The difference of about $11 million is not included in the budget, so that it is very difficult to come to any conclusion as to the level of income from charges for extension and public services in comparison with expenditures.

According to the Legislative Analyst, the 1966-67 budget provided state support in the amount of approximately $1 million for University Extension (7.2 per cent of the total budget), $5.3 million for agricultural Extension (62 per cent of this budget), and $300,000 for the miscellaneous activities (20 per cent). Each of these amounts and the additional expenditures not included in the University's budget should be reviewed to determine whether charges for University services might be increased and whether state subventions might not be greatly reduced or eliminated entirely in these areas. The Regents, aware of some of these problems and opportunities, commissioned a study of possible sources of additional services revenues from a prominent consulting firm. The recommendations from this study have been available for some months but, to the Committee's knowledge, no action by the Regents has yet been taken on them.

Withholding

The last but perhaps most obvious method of increasing state revenues as a practical alternative to tuition is the adoption of a system of withholding and estimating the payment of the state personal income taxes. The issues of tuition and withholding have become closely interwoven because both are readily apparent sources of additional funds for higher education. According to a report issued on July 10, 1967, by the Legislative Analyst and based upon computations of the Franchise Tax Board, amendment of the 1967 tax legislation to include withholding and estimating would have produced increased cash revenue of up to $387 million in 1967-68, $135 million in 1968-69 and $85 million in 1969-70.

The continuing revenue effect would be an increase of $85 million per year, according to this report. This amount consists of $20 million from persons who do not now pay a state income tax because of filing "no remittance" returns or no returns at all; $10 million attributable to the earlier collection of payments and partial payments which would otherwise be received through billings and collection efforts after receipt of returns; $45 million primarily as a result of gaining the benefits of economic growth during the current income year rather than the following year; and $10 million from persons who fail to file because of bankruptcy, death, emigration, etc.

A system of withholding may have other faults, but it is clearly a more equitable and less regressive means of supporting higher education than tuition, inasmuch as it is primarily a method of improving the collection of income taxes. The present state personal income tax has a number of flaws, but it is the one state tax which is directly based upon ability to pay and which captures the increased earnings which may result in part from higher education. The yield which would result from the adoption of withholding and estimating would be substantially greater than that which would be produced by any rate of tuition which has been proposed recently. Moreover, the adoption of withholding would not require the increase in administrative staff and expense which a system of graduated tuition payment would entail for the colleges and University campuses.

To summarize this discussion of alternative methods of increasing revenues for the support of higher education, it is the Committee's position that no compelling argument has yet been made for the imposition of tuition at the University, state colleges and junior colleges. There are, on the other hand, several alternative measures which hold promise of providing additional funds and which appear to be distinctly superior to tuition in terms of yield, collateral effects, equity and ease of administration. In no case is as great a departure from existing state policy required as for the imposition of tuition. Accordingly, the Committee opposes the imposition of tuition or a comparable increase in student fees for the 1968-69 fiscal year.

Student Financial Aid

The Committee assumes that the basic purposes of student aid are identical to the public purposes of higher education generally: the development of a better educated, more thoughtful and more productive body of citizens. Support to students, as distinct from support to institutions, should in various ways reduce the loss or wastage of human talent associated with individual failures to attain, through formal education, those levels of knowledge, technical or professional accomplishment, and general culture to which they might aspire and be fitted.

Viewed in this perspective, it is worthwhile to trace the flow of students into and through the state's educational system to the extent that available data make this possible. The results of this effort are quite instructive and provide significant guidance to deliberations on the amounts, kinds and distribution of student aids. Recent studies have indicated that between 20 per cent and 25 per cent of high school entrants in California do not complete high school. This attrition rate is equivalent to about 75,000 students per year who might but do not graduate from high school. Those who do not finish are strongly concentrated among children from minority groups and from economically and culturally disadvantaged families from all social and ethnic groups. Findings of similar concentrations of high school drop-outs among disadvantaged children have been found in studies in other states.

We estimate that roughly two-thirds of all California high school graduates go on to college sooner or later. The number of first-time entering freshmen in public colleges in California in recent years has been the equivalent of about 55 per cent of the number of California high school graduates for the preceding year. However, this figure excludes students going to out-of-state and private institutions and does not account for delays in college enrollment following high school graduation. These factors might be expected to raise the measure of college-going students to about 65 per cent.

Data from two recent studies seem to substantiate this estimate. The Coordinating Council for Higher Education, using data from questionnaires sent to a sample of 16,000 1967 public high school seniors, reported that about 32 per cent of the 8,162 respondents said they had no plans to attend any college after high school. Assuming that the rates of response may be lower for those students who do not plan to attend college, the 32 per cent probably should be adjusted upwards, perhaps to 35 per cent or even a bit higher. SCOPE data from respondents to a 1967 survey of the parents of high school students who had left high school one year earlier generated a composite figure of 24 per cent not in college one year after graduation. Unfortunately, the "no response" characteristics of the SCOPE study induce biases of the same sort and probable magnitude as those in the CCHE study. Further, the SCOPE report does not specify which of the three college terms is taken as the base of the enrollment finding. It is known from other components of the same SCOPE study that there is a very high attrition rate *within* the first college year.

As was noted above in Section III, the attrition rates over the undergraduate years are quite high in California overall, and they vary quite considerably from institution to institution. A very limited study of Berkeley students suggests that 50 per cent of freshmen entrants do not complete a bachelor's degree at Berkeley within five years. One follow-up study suggests that many of those who leave Berkeley eventually get degrees at other institutions, so that the effective attrition rate may be closer to 20 or 25 per cent. No comparable data are known to be available for the state colleges, although is it thought that the gross or unadjusted attrition rates are at least as high for the colleges as for the University. Because attrition rates are thought to be largest in the junior colleges, which also enroll the largest numbers of students, the average or overall state ratio of college completion to college entry is believed to be in the range of 10-15 per cent of those who enter high school.

The four-year degree is not the only worthwhile educational objective, and its use as the terminal point of attrition analysis is misleading. It tends to underemphasize those values and benefits associated with exposure to or completion of one- and two-year curricula. Nevertheless, the attrition rate among students at California's public institutions of higher education seems alarmingly high.

It is clearly possible to design and carry out publicly sponsored programs, including but not limited to student aid, which will aim at reducing the attrition rates over the secondary and college years. Deciding the optimum composition and focus of such programs, however, will be difficult. In its deliberations on issues of student financial aid, the Committee found it helpful to distinguish among at least four major aspects of student aid policy:

1. The relative importance of the various rates of attrition which occur at each educational level;
2. The level of individual or family financial effort required for entry and continuing enrollment;
3. The breadth of institutional choice to be provided; and
4. The characteristics of the enrolled population (social, economic, racial, degree of academic ability, field of study, etc.).

If it is decided that a significant public loss is associated with at least some premature departures from school, it must still be determined how important is the loss associated with attrition which occurs at various points along the educational road. Is it better to reduce the number of high school drop-outs than to increase the proportion of high school graduates who attend college? Are freshmen more worthy of student aid than seniors? There are formidable problems associated with measuring or judging the relative severity of attrition losses in relation to the position at which the losses occur.

A second aspect of the problem is the level of financial effort or sacrifice which is to be demanded of a student or his family before student aid is made available. Is there a net public loss associated with part-time or intermittent college attendance due to a student's need to earn his own or his family's support? Is there an upper bound on the amount of term-time employment which it is reasonable to expect from students? The several formulae in current use by student aid officers in estimating the amount of a student's financial need generally reflect decisions made by the College Scholarship Service respecting the levels of effort which are to be expected of students and their families. But the CSS formulae or any others which might be proposed should not automatically be adopted by the state as elements of public policy without specific analysis and legislative debate, since the detailed character of the formulae have important implications for the purposes and results of student aid as well as for the size and allocation of the aid budget.

In a list of student aid alternatives developed recently by the Coordinating Council, certain aid plans were proposed on the premise that there is a significant public interest associated not only with college attendance but with the breadth of student choice as to what college to attend. Supporting arguments were presented to the effect that financial considerations should not be germane to a student's selection of a college and that, if a student wished to attend a given institution, and if he were acceptable to that institution, the state should make up the difference between the student's resources (as determined by formula) and the total costs of attending the institution in question.

This line of argument suggests a departure from the policies which generated the widespread growth of junior colleges; i.e., that it was sufficient and economically prudent to provide comparatively low-cost education (to the taxpayer and to the student) in the form of junior colleges from which students might transfer to other institutions. The fact that geographically distributed junior colleges would lower the private costs of college attendance was specifically cited in the Master Plan report as an argument in support of the junior college policy recommended.

There undoubtedly are benefits to be obtained by greatly expanding the range of choice open to individual students, but the nature and the magnitude of the public interests to be served have yet to be determined. The whole matter needs careful consideration, for the ramifications of such a policy, with respect to enrollment and support costs, would be very great not only for the individuals concerned but for the state and the various segments of higher education.

The last source of alternatives respecting the purposes and configuration of student aids is generated by preference for distributional characteristics of enrollment other than those now in effect. Some studies have pointed out to the Committee that there are relatively few Negroes in the University and state colleges in comparison to the proportion of Negroes in the total population. In part, so far as University attendance is concerned, this is due to the relatively low proportion of Negroes who graduate from high school and who qualify under present entrance criteria. Those who do qualify attend in a high proportion. Financial aid alone could do very little in the short run to change the proportion of Negroes attending the University, although it might have significant effects over time in the proportion of Negroes who qualify for entrance and attend.

Because of the evident misunderstandings regarding the joint effects of financial aid and existing college eligibility regulations, it is of value at this point to emphasize the fact that increased financial aid at the college level is not likely to have any significant direct or short-range effect upon the racial, social or economic composition of enrollment at the University or state colleges. It is necessary to change both the size and composition of the pool of eligible students and the group-specific participation rates to have significant effects. If desired, such objectives might be accomplished by various measures aimed at improving the motivation and academic performance of the students or by the establishment of entrance requirements which are not related to any specific percentage of high school graduates. As long as college eligibility is restricted to a percentage of high school graduates, one student can become eligible only at the expense of some other student's becoming ineligible. If the level and intensity of academic competition is increased through student aid, it is hard to foresee why those students who presently compete at a disadvantage will not continue to do so.

Other aspects of the composition of student enrollment might also be made objects of student aid policies. Is it more important to aid the most able students or should opportunities be made available to anyone with defined, minimum academic or intellectual attainments? What ought the cut-off point be, if any?

To summarize this discussion, one purpose of student aid might be to increase the number of students who enter college. Another might be to increase the number who, having entered, remain to complete their studies. Other alternatives relate to an enlargement of the range of institutional choices available to students who now go to some college with or without aid. Aid might also be seen as a device to reduce the time taken to complete a college program; e.g., to reduce part-time attendance, or to redudce the degree of financial effort expended by a student or his family, or to alter the distribution of enrollments among fields of study. Finally, financial aid might be used to change the selected characteristics of college populations.

Clearly, the potential purposes and strategies of student aid are quite diverse, and specific programs and budget levels will vary widely depending upon the mix of purposes to be served. It must be remembered, further, that many of the major causes of attrition have little to do with immediate financial circumstances. At best, financial aids are only one line of attack on the larger problem of attrition. At the high school level, it is not obvious that student financial aid, *per se*, is more than a minor tactic.

The Committee does not believe that sufficient evidence or analysis has yet been brought to bear on the development of specific programs or upon the comparison of the costs and expected benefits of specific programs to justify support for any particular program at this time. At the present preliminary stage of its deliberations on this topic, the Committee would favor the focusing of attention on what might be designated as the extremes of the attrition problem. At one end, the Committee is concerned with those students, largely from minority groups and economically disadvantaged home, who comprise the bulk of the students who do not even finish high school. The statewide average figure of a 20 per cent loss in high school masks the facts that the figure goes as high as 60 to 70 per cent in the high schools serving Watts and similar areas and that these compelling educational statistics are related to a host of social and economic problems.

The other extreme involves students of proven academic ability and motivation who, for financial reasons, are not able or willing to make the sacrifice of income associated with completing an undergraduate or graduate degree. Since California is to a large extent supported by a talent-dependent industrial base, the social gains associated with increasing the proportion of finishers may be particularly large in relation to the money already invested and especially with regard to graduate programs.

The Committee at this time is far from having a fully develop rationale for student aid policies; the outline above is at most a sketch of one way of approaching an ordering of applicable social values. The matter of student assistance will be an important element in the Committee's final report to the Legislature in 1969, but at this stage there is an obvious need for more research and experimentation. Several of the recommendations which Dr. Kenneth Martyn has put before the Committee in his initial study appear to merit attention in this regard, particularly those programs which can be established or continued on a pilot basis at one or two campuses for a careful evaluation of their effectiveness. It would be premature, however, to launch a major state student aid program at this time in the absence of a clear determination of the objectives, methods, and probable costs of such a program.

Constitutional Revision

The framers of the California State Constitution drew a very rigid line between public and private institutions in an effort to prevent the use of public monies for sectarian purposes and violation of the church-state distinction. Since there were few private institutions which were not also strongly sectarian in California's early days, the two distinctions tended to be roughly equivalent. This equivalence does not remain true today. With exceptions, the private colleges and universities of California, including many of those which once enjoyed sectarian sponsorship and origins, are secular schools for all practical purposes. History and biology courses at Stanford are indistinguishable in their approaches and aims from comparable courses at UCLA, San Jose State or any other college. In order to preserve a valid and important distinction between church and state, it is not necessary to maintain a rigid distinction between public and private institutional management or support.

The major private institutions in California are national institutions in at least two senses: first, they attract and dispatch faculty and students from and to all parts of the country. Secondly, their several instructional, research and student aid programs are in a substantial measure supported by federal funds. While the federal legislation providing for various kinds of support to colleges and universities contains provisos preserving the church-state distinction, federal monies are as available to the California Institute of Technology as to Berkeley. The public-private distinction is not noticeably operative with respect to current federal programs of aid to higher education. Nor does there seem to be an important difference in the way in which private and public institutions of comparable kinds serve the broad purposes of education, research and public service common to all major four-year institutions of higher education.

In distinction to the situation in Pennsylvania and other states where financial crises among private institutions have forced sudden decisions upon state governments and where various mixtures of public support are combined with mixtures of public and private control, the private institutions in California are in generally sound financial condition and fully able not only to maintain their levels of operations but to expand and diversify their programs and operations.

California now aids its private institutions by two devices: tax-exempt status and the State Scholarship Program. One of the principal purposes of the scholarship program has always been to provide public funds for the private institutions to enable them to enroll a greater number of California high school graduates than would otherwise be possible. Both of these devices work indirectly and therefore provide no clear measure of their effectiveness. Neither is subject to adjustment in a manner which makes it a useful tool for educational planning and management.

These several lines of argument have led the Committee to believe that there may be great potential value and no substantial disadvantages associated with a reconsideration of those portions of the Constitution which currently forbid any public monies to be appropriated to or through private institutions. The fortuitous circumstance whereby a Constitution Revision Commission is operating concurrently and coopera tively with the Joint Committee on Higher Education suggests that there is a timeliness respecting deliberations on the public-private distinction in the Constitution as well as on other higher education policies which might become possible through constitutional revision.

In pointing out that constitutional changes might well be considered, the Committee is not at the moment endorsing any particular change or taking a position in support of any particular argument for revision beyond noting what is almost obvious, that the present constitutional wording limits the planning and budgetary flexibility of both the private institutions and the state, even in cases where there might be ways of using public funds through private institutions under conditions and for purposes approved by all concerned.

One noteworthy possibiilty involves the partial public support of expanded private medical schools or of new combinations of public and private institutions in addition to or instead of total public support of new University medical schools. An expansion of the USC Medical School in Los Angeles, partial support to a combination of the Presbyterian Medical Center and the University of the Pacific in San Francisco, or aid for the development of a new medical center affiliated with California Institute of Technology are possibilities which simply cannot be considered as real options under current law. Because of the very great costs associated with specialized professional schools, and not only medicine, the possibilities of new modes of public-private partnership in such fields might be of significant value to the institutions, to the professions involved, and to students and taxpayers generally.

While the arguments so far have focused primarily upon the possibility of a change in the language relating to the public-private distinction, other major organizational changes which might be debated might also require constitutional revisions. The creation of a single governing board for all of public higher education, for example, would require constitutional revision, as would any fundamental redistribution of responsibility for institutions and activities currently under the direction of the Regents of the University. Without any attempt to prejudice the results of its own subsequent deliberations or those of other groups, the Committee finds that there are several compelling reasons for devoting specific attention to constitutional amendments which might be required to implement policy changes respecting the organization or financing of higher education generally.

Organization and Governance

Quite apart from constitutional revisions which might be necessary to implement organizational changes respecting higher education, the Committee notes that there are several major policy questions regarding organization and governance worthy of careful discussion and examination.

For example, without altering existing boards or their composition and general responsibilities, there is a wide field for analysis respecting the degree and manner of their participation in the budget process. Should the state government appropriate an annual lump sum to the State College Trustees, reserving post-review but foregoing detailed, pre-expenditure supervision of budget transfers? Sould the Coordinating Council or some similar agency have a formal position in the line of budgetary disbursements and receive, in the first instance, all of the public monies to be allocated for higher education?

Are the four segments the appropriate planning units for all purposes? Are there circumstances when it would be advantageous to transfer an institution from one segmental jurisdiction to another? If there are, what might be the mechanisms for initiating the transfer? Should junior colleges ever be used as nuclei for the establishment of new four-year colleges? How and by whom should such decisions be made?

Prior to any evaluation of organization arrangements, it is necessary to improve the clarity and explicitness with which the goals, missions and purposes of the segments are formulated. Only in relation to decisions on objectives can organizational forms usefully be evaluated. Because of the dependence of organizational decisions upon prior decisions on institutional purpose and functions, the Committee has placed organizational questions last in its sequence of study topics to allow a maximum of time for discussion and deliberation on policy operations within Committee and among individuals and groups concerned with the progress of higher education in California.

However, there is one fundamental matter about which the Committee believes study and discussion can usefully begin at once. One of the major objectives of the 1960 Master Plan for Higher Education was to draw together the three separate elements of public higher education into a "tripartite" system with coordinated operations and objectives. In our judgment, the Master Plan was at best only temporarily successful in this regard. Certain rivalries were quieted for a time, a voluntary coordinating agency was established and there were general agreements as to the allocations of students and major program responsibilities. But the Master Plan and resulting legislation did little to alter the basic fact that California has four separate but parallel systems of higher education which are only very loosely united in a common purpose.

The four separate systems—the public junior colleges, the California State Colleges, the University of California and the private colleges and universities—do not, of course, cover exactly the same ground; the junior colleges, for example, have so far been kept from entering into upper division undergraduate programs, for the most part. But, following a brief truce, the four systems are once more entering into intense competition for the basic resources of higher education. As a result of this competition, walls have been erected between them which are rarely surmounted. While other states with large and rapidly growing investments in higher education are developing unified structures in the public area, California, in spite of, or perhaps because of the Master Plan, is continuing to allow its four separate systems to grow independently and largely unchecked except by their relative ability to compete for limited resources.

The rivalry among the four systems centers upon the competition for funds. The continuing struggle between the University and the state colleges is obvious and well known, but there is also a growing competition between the junior colleges and the other two systems for both current and capital funds. The continuing unplanned growth of the public junior colleges presents a clear threat to the other two systems in this regard, despite the fact that state support for junior college current expense remains comingled with other public school subventions. Added to this is a growing sense of competition between the public and private institutions for public subsidies as well as for private gifts and grants.

There is also, inevitably, a very earnest competition for top-rated students and faculty. The private institutions are beginning to view the growth of student aid programs for the University and state colleges with some alarm, for such programs tend to reduce one of the advantages the private colleges have had in attracting very able students. All four systems also compete for new faculty, either directly in their recruitmnent efforts or indirectly in setting their salary scales and providing fringe benefits.

There is also rivalry and competition for research funds, new instructional programs, federal grants and projects and many of the other elements (except, perhaps, student unrest) which mark leading colleges and universities. Clearly, some of this competition is beneficial to the four systems, but in our judgment it has now reached the point at which it threatens not only to cost the taxpayers excessively but also to deprive many students of reasonably equal educational opportunity. All the resources which must be put together to make a first-rate institution of higher education, be it a junior college or a campus of the University—the money, faculty, able students, educational initiative and leadership and all the rest—are not available in such abundance that there can be all winners and no losers in this competition.

The most pressing problem in this regard at the moment is the drive by the state college system to obtain university status. Such status would at once open up to the colleges the whole realm of doctoral degrees, professional schools and organized research. Eventually the state colleges would become, if the money were available, a second university system, although with somewhat less internal unity than the University now exhibits. The cost would be enormous, and this cost could only be borne either by placing a greater burden upon state taxpayers or by withdrawing funds otherwise available for the University and junior colleges.

In view of all this, we believe that immediate consideration should be given to a restructuring of higher education in California to break down the barriers between these four parallel systems and to bring about a much greater degree of unification of purpose and operation. Such a restructuring need not immediately involve the private institutions nor need it in any way disrupt the current operation of individual public institutions. The primary objective would be to make fundamental changes in the present structure of governance, administration and planning for the three public systems of higher education.

As an alternative to the present structure we propose consideration of a consolidation of the junior colleges, state colleges and the University into a single regionally-oriented system. This statewide system might be subdivided into at least 3 and perhaps as many as 5 or 6 regional system, each composed of one or more university centers, several liberal arts colleges and a cluster of supporting junior colleges. The university centers would provide a focus for doctoral and post doctoral training, organized research and a very limited amount of undergraduate instruction. In many cases the existing campuses of the University would serve as the new university centers, but several of the larger state colleges, such as San Francisco, San Jose and San Diego State Colleges, might also be converted to this function.

In direct support of these university centers would be a number of liberal arts colleges similar in purpose and function to the existing state colleges. They would be undergraduate teaching institutions primarily. In some cases a substantial amount of specialization might be authorized in order to make the best use of existing facilities and resources, but most of these institutions would maintain a broad undergraduate instructional base with emphasis upon upper division instruction. Although these institutions would be similar to the existing state colleges, it is quite possible that several of the small new University campuses which are outside the major metropolitan areas and which have established strong undergraduate programs could also be developed in this direction.

Finally, the public junior colleges, while retaining their basic functions, would be reoriented within this regional structure to cluster about the liberal arts colleges and to take on a significantly greater responsibility for lower division instruction. They would no longer be entirely autonomous institutions in relation to the other elements of public higher education but would be brought in to serve and be served by the liberal arts colleges and university centers in their regions.

The purpose of this restructuring would not be simply to rearrange existing institutions and governing powers. The fundamental purpose would be to break down the barriers which now divide the three public systems of higher education and to make it possible for them to share scarce resources to the benefit of students, faculty and taxpayers, alike. For example, a faculty member might regularly teach at one of the liberal arts colleges, but, in certain circumstances, he might teach full- or part-time on a temporary basis at one of the region's junior colleges. He would also be able to take advantage of regular arrangements to teach and conduct research on a temporary basis at the region's university center. Similarly, university faculty and research personnel and junior college faculty could move between institutions, with no loss in tenure or other privileges, to make the best use of their talents.

Other resources within the region could similarly be moved about laterally to their best advantage. Specialized facilities such as research laboratories, research libraries, data processing equipment, television facilities and high cost occupational training facilities could be located in places of greatest demand but would be open for use by students, faculty and administrators from any institution within the region. By these and other means instruction throughout the system could be raised to a common level of excellence, without the costly competition for resources which characterizes the present structure and which effectively blocks comprehensive statewide planning for higher education.

This proposal represents no more than a broad outline of one possible course of action in response to what the Committee finds to be a serious obstacle to the continued development of higher education in this state. It is advanced for consideration at this time with full knowledge that it makes a significant departure from the explicit and implicit intent of the Master Plan, although aimed at the same fundamental objectives as were established for the Master Plan. The purpose of the Committee in this regard is not to close off debate but to open this whole area to further analysis and discussion.

6. Aids and Obstacles To Decision-Making

This section summarizes some of the gaps in information which appear to be most significant for higher educational planning and outlines certain of the difficulties involved with the conceptual and analytic apparatus applicable to decision-making in areas of legislative concern. These are obstacles which the Committee will seek to overcome, within the real limitations of time and available resources, in the coming year. This section also provides brief summaries of some of the major findings and recommendations developed as aids to Committee deliberation and legislative decision-making by contractors to the Committee. These technical reports as they are published will be available separately from the Committee's office, but in limited numbers.

Conceptual Problems Regarding Educational Costs

In developing estimates of the total magnitude of educational costs in California, it is useful to distinguish between money spent for the various activities of educational institutions, resources committed for institutional purposes which may or may not have identifiable dollar equivalents, money used to support students and certain opportunity costs, particularly those associated with the personal income foregone when college attendance is chosen instead of employment. It is highly questionable, however, whether these different kinds of costs can be added together.

In identifying the costs of higher education with annual expenditures by colleges and universities (as was done in Section 3), it is evident that not all of these activities are necessarily or inevitably related to higher education. Other sponsors and institutional arrangements could be and are found to provide football games for spectator enjoyment. With or without public subsidy, agricultural research could be conducted in industry-sponsored research laboratories. The Atomic Energy Commission need not forever continue a wartime expedient of using the University of California as a research and research management contractor for the Livermore and Los Alamos laboratories.

While research and scholarly investigations are intimately bound up with professorial competence and with some kinds of graduate training, the amounts, distributions, emphasis and support of these activities can and do vary widely over time and from institution to institution, suggesting that the exact patterns of research current in California institutions may not necessarily have sovereign value. Public service and the amounts of faculty time devoted to community activities, paid or unpaid consulting and related activities can also be varied over considerable ranges.

In developing a working definition of higher education, there are two qualifications that must be set out:

1. The current magnitude and balance of institutional activities have historical origins and are subject to debate and to policy-induced changes; and
2. Many of the higher education activities share the nature of joint products; that is, research and instruction, for example, can flow from a single pattern of academic activity.

The first of these qualifications underlines the fact that the specific mix of academic activities now in force need not remain unchanged. The second qualification seeks to emphasize that there may be limits to the range over which the mix of activities can be varied. It might not be possible, for example, to offer certain kinds of advanced instruction without concurrently undertaking research in those fields. Instruction and research, especially in new fields of intellectual inquiry, may be practically inseparable. Whether they are or should be so in all instances and whether the proportion of one activity to the other need be stable remain important open questions for the Legislature as well as for administrative and faculty groups concerned with the uses made of institutional resources.

At a more technical level, there are troublesome accounting problems associated with the equation of educational costs and institutional expenditures. In particular, tuition charges which show up as a personal educational expenditure by students also show up as a source of institutional expenditure. Double counting of this type is hard to avoid even when the problem is known and the dollar sums involved have been estimated. Further, much of the money spent by students for living and educational costs comes from institutional budgets in the form of salaries, grants, and the like. These funds may in turn have come to the institution in the form of research contracts from federal agencies. As this single example indicates, there are complicated flows of funds into and through institutions which are seldom revealed by existing systems of institutional accounting. If the notion of student aid is reasonably broadened to include institutional employment to students' wives, the close, functional interrelationships between the economics of graduate instruction, federally sponsored research, and student aid can be appreciated.

In attempting to identify the magnitude of resources devoted to higher education, the Committee found that measures of the annual value of land, buildings, library and art collections are seldom reflected in institutional or public accounting systems. While it is not likely that UCLA will be sold to the highest bidder, overlooking these resources introduces a downward bias in estimates of the totality of resources devoted to education. The accounting practice of valuing real estate holdings among endowments at other than market value also introduces a downward bias to estimates of resources potentially available for educational purposes. These points and others relating to academic cost accounting have been treated in a study by the Auditor General which is discussed later in this section.

With respect to student expenditures, there are comparable problems of accounting conventions and definitions. Recent studies indicate that private costs in the range of $1800 to $2200 per year are typically incurred at public institutions by students and their families for board and room, travel, books, supplies, equipment and college fees. These annual expenditures are appreciably higher for students attending the more expensive private colleges and somewhat lower for students at junior colleges and for students who live at home with their families. Student budgets also vary with age and the extent of family responsibilities. While all of these out-of-pocket costs are properly to be considered in deliberations on the economics of attending college or on student aid programs, it is not as clear that all these same costs are usefully to be regarded as costs of higher education. Living costs, some travel, some entertainment expenses, health insurance, and other expenses are not uniquely associated with going to school.

Subject to comparable conceptual difficulties is the notion of foregone income. Briefly, it is often the practice to include among the costs of a program the costs associated with the opportunities foregone by its selection; in the case of college attendance, income is foregone which might otherwise be earned. For poor students and for impoverished families, these opportunity costs loom large, since living costs continue while income does not if a family member works less or not at all while going to school. Foregone earnings are a relevant and possibly dominant element among economic determinants to college attendance plans for those with severely limited resources. Accordingly, foregone income is relevant in all contexts where economic factors are being considered as limitations to access to higher education.

It is not clear, however, that opportunity costs of the same sort and magnitude exist for all conditions of students. For the well-educated and affluent, college attendance rates appear to be in the 90-100 per cent range. The alternative of working and not going to college seems not to be a real choice for many such students. If this is so, is it useful to multiply an assumed average value for foregone earnings by a total number of sutdents? There is also the vexing conjecture that if all students were to enter the employment market, they would not all find jobs; further, some of those who did would merely replace nonstudents who held jobs previously. Even if employment is a real choice for individual students, it is clearly not a practical or even a desirable option for large numbers of students at the same time.

Student Migration Studies

Quite early in the Committee's deliberations, it was discovered that startlingly little is known about the magnitude or character of flows of students into, among and out of California's institutions of higher education. The data sources which the Committee drew upon for the materials discussed in Section III provide only a gross, unadjusted and overall numerical picture of attrition. The data themselves provide no clue to the varieties of attrition or to the variety of causes of attrition. Still less do they help to distinguish kinds and causes of attrition which might be deemed desirable from those deemed undesirable. It is obvious that some kinds of attrition carry with them greater costs and penalties to the public interest and to the individuals concerned than do others.

Similarly, the programs necessary to reduce or eliminate various kinds or sources of attrition may vary widely in cost and in effectiveness. Without an apparatus of sufficient complexity to permit the examination of such questions in the light of reasonable detail respecting different kinds of dropouts, transfers, interruptions and terminations of college attendance, these same issues will remain as puzzling as they are central to any rational ordering of educational investments.

There are other important considerations as well. The costs of higher education, to the state and to the student, are affected by the time taken to obtain it. Assessment of the validity of admissions requirements as predictors of success depends upon knowing what happens to students who leave as well as to students who remain in California institutions. Evaluations of the productivity of the education system and of the efficiency of the configuration of its several inputs of human and physical resources and time all depend critically upon vastly improved measures of where students come from, where they ultimately go and what happens to them over the intervening years. It is for this reason that the Committee contracted with the Office of Analytical Studies of the University of California to develop a framework for the measurement and analysis of student flows.

While the Committee is strongly of the view that problems posed by increasing attrition rates are among the most critical of the higher education issues, it is also aware that these problems and their remedies are of distinct types. If it should be found, for example, from analyses of attrition data organized with respect to personality characteristics of students and to their high school attainments, that there were ways of identifying "attrition-prone students," a remedly might lie in adjusting admissions requirements. Alternatively, the same findings might suggest that improved counseling could reduce the impact of the factors observed to correlate with drop-outs. To the extent that analyses substantiated the widespread supposition that student finances are an important factor in attrition, altered student aid policies would offer applicable remedies. If attrition rates were found to be higher among students overly exposed to large classes, different configurations of institutional resources might be seen as a potential remedy.

These examples are rehearsed to indicate the complexity of the several quite different kinds of problems posed by gross and unanalyzed attrition data and the quite different remedies and lines of approaches which are specifically applicable to reduction of attrition of kinds deemed to be undesirable and avoidable. A system which exhibited no attrition would be as defective as the present one, although for different reasons.

The studies of migration under way and those which are likely to be recommended for continuing effort are expected to be among the most important contributions of the Joint Committee to the improvement of the data base available to the Legislature and to other agencies concerned with the resources and the outputs of the state's educational system. The flow studies are primarily keyed to long-term and continuing effort, but even the first harvest of insights and information may provide important contributions to the improved formulation of policy alternatives as well as to the grounds for legislative policy decision.

Higher Education Benefits

Another technical topic on which the Joint Committee commissioned a special report was that of the costs and benefits of higher education. Professors W. Lee Hansen and Burton A. Weisbrod, who have done previous work in this field, were asked to undertake three related efforts:

1. To identify, classify and measure the economic and social benefits and costs associated with higher education;
2. To present an agenda for future research in areas where data shortages or limitations to available analytic techniques do not permit full treatment of the first charge; and
3. To set forth a framework for relating what is known about the costs and benefits of higher education to legislative policy deliberations on the amount and sources of financial support for higher education in California.

The work done under this assignment was submitted to the Committee in a report titled BENEFITS AND COSTS OF PUBLIC HIGHER EDUCATION IN CALIFORNIA. Since it is available from the Committee in limited quantities, together with copies of three short reviews of the report prepared independently by Professors Kenneth Arrow of Stanford, Seymour Harris of the University of California at San Diego and Werner Hirsch of the University of California at Los Angeles, no detailed summarization of these materials will be attempted here. The three reviews touch upon the limitations and strengths of the basic report and upon certain technical issues of interpretation and analysis.

Hansen and Weisbrod suggest that educational choices can be grouped under three headings:

1. Those relating to the determination of the outputs of education, such as the number of students served, the numbers and kinds of curricula offered, the quality of instruction (in distinction to the quality of the students instructed), and the number and kinds of graduates produced;
2. Those relating to the inputs of education, such as the number and kinds of faculty, the proportion and configuration of capital equipment and facilities, the use of time or of the schedule dimension, and the comparative efficiencies of different configurations of resources or of different sizes and locations of institutions; and
3. Those relating to the financing of education, such as criteria applicable to the distribution of the cost burdens of education over various beneficiaries or technical and equity questions relating to the effects of financing decisions upon inputs and outputs of education.

In considering qualifications and distinctions applicable to the benefits of higher education, it was noted that they can vary in form (increased earnings, heightened capacity for cultural enjoyment, etc.), in magnitude, in the population which receives the benefits, in the time period over which they accrue and with the type and duration of education received.

The useful distinction between the investment and the consumption effects of education was made, as was the related distinction between the personal or private effects of education and those which are public or social in character. Education not only tends to increase long-term personal income, as an investment would; it is also to be enjoyed for its own sake as a consumer good. Unfortunately, the authors had little to say about the latter.

Among the interesting empirical results reported by Hansen and Weisbrod were calculations of the present worth of the expected incremental lifetime earnings associated with the completion of an undergraduate degree contrasted with the earnings of those who finish high school only. These estimates, discounted further to adjust for the fact that some of the extra earnings are due to inherent differences in talent and not necessarily to extra schooling, came to an increment of about $21,000 for college graduates, or roughly the equivalent to the author's estimate of the present value of four years of foregone income plus the four-year costs of living and attending a public institution. A clear implication from the Hansen and Weisbrod calculations is that the private costs of a four-year education are approximately the same as the expected average lifetime incremental returns from such an investment reduced to present value. This finding highlights the limitations of an approch to investment evaluation based upon averages and underscores the importance of the qualitative and consumption aspects of private education benefits.

Having discussed the important distinction between personal and social benefits, Hansen and Weisbrod carried out calculations respecting the tax returns which might be collected from individuals educated in California. This approach neglected the economic returns of education through heightened general productivity and hence through taxes from those who benefit in their incomes indirectly from general levels of prosperity and productivity due in part to the quality, sophistication and flexibility of a highly educated labor force. Taxes from those who do not go to college certainly have a component traceable to the productivity of those who do.

On the basis of the Hansen and Weisbrod study and other similar economic investigations, it is evident that the external benefits of education are important but very difficult to quantify. Unfortunately, these general convictions do little to resolve the specific and detailed issues of how much to spend on education, what to purchase with the investment and where to raise the money. The Hansen and Weisbrod study seems to suggest that there is an over-investment in higher education both on the part of individuals and the state, but the scope of their explicit analysis is much too narrow and possibly too conservative to be compelling.

Financial Reporting and Program Budgeting

Whatever may be the merits of the budgeting and accounting categories in use at the University of California for the purposes of internal financial control, these categories are of negligible value as aids to understanding the intermediate and final outputs of the University, their unit costs, their joint natures and their interrelationships. This conclusion is a paraphrase of a major finding of a special study of University financial practices conducted under contract to the Joint Committee by the Office of the Auditor General. The Auditor General recommended that "the University design and implement a program budget and cost accounting system."

Among the more convincing documentation which the Auditor General assembled in support and justification of his recommendation was the finding that "all faculty salaries and expenses, except for extension and certain medical faculty, are charged to instruction and departmental research regardless of the activity benefited by the work performed by the faculty member." The Auditor General found also that staff benefits in the amount of $17 million are not allocated to any of the individual activities or purposes served by staff activities. Not only are staff salaries not associated with specific purposes, but not all applicable staff costs are associated with staff salaries.

There is a close relationship between the lack of program analysis in University accounting found by the Auditor General and difficulties of policy formulation experienced by the University and the Legislature. It is more difficult to decide how much of an academic product to buy if you cannot find out what it costs from various sources.

Although the Auditor General's study was focused upon the problems of program classification and upon the adequacy of current reporting on the sources and uses of funds, he also raised interesting additional questions of broader financial policy, including the treatment of endowment funds as discussed in Section 5 of this report. The Auditor General pointed out that if more realistic indices of investment performance were used, the fact of indifferent rates of return on investment of endowment funds would be more evident, and this in turn would suggest that improved portfolio management might be instituted.

The report of the Auditor General is compendious and in many portions highly technical, as necessitated by its subject matter. The few findings summarized here do not represent either the range of topics considered or the breadth of the recommendations. Neither does this summary give full weight to the Auditor General's identification of the many difficulties and the qualifications which need to be applied in any effort toward program budget development. He found, and the Committee believes, that vastly improved program budget categories are important and that cost accounting systems should be developed which serve these categories. No one believes that the technical and philosophical problems involved are easy or that they can be solved at once.

One problem, in particular, is the proper classification of costs associated with those University activities which have joint or multiple products. If the full costs of such programs are attributed to one of the joint products, the others appear to be free. If the costs are spread in some appropriate manner, all products appear to be less costly than if they were to be procured separately. These difficulties are fundamental and a greater comprehension of their character is essential if the peculiar, internal economics of University operations are to be clearly understood.

A case in point is of particular interest as an example of the dilemmas of University financial accounting. A federal research contract may be attributed in accounting records wholly to the category "organized research." One could, presumably, find a body of publications which a federal contract officer would identify with the results or outputs of the contract. This simplistic approach to accounting and to output identification neglects much of importance in the internal economics of University operations. For example, the contract funds may have been used in part to pay wages to graduate students and thus served as exact surrogates to student financial aid from other sources. In addition to supporting graduate students working on the project directly, and thus contributing to that field of graduate instruction, the wages of the project secretary may have supported her husband, a graduate student in some other field of study altogether. The equipment left over from the particular research may have become available for further research and instruction not supported by the federal government.

As a stream of water flowing westward from the High Sierra is used many times for power generation, flood control, irrigation, municipal water supply, wildlife habitat enhancement and outdoor recreation, so there are multiple uses and products from a single flow of federal research funds. It is certainly true that the funds were spent for "research;" it is certainly misleading to think, as the accounting system implies, that a stack of reports and their contents were the only, or even the most significant products of the contract.

Any system of budgeting and accounting works best for some purposes and less well for other purposes. It would appear naive to suggest that a new system of program budgeting, even if it could meet some of the obstacles outlined above, would solve all of the University's accounting needs. In a sense, the institution of detailed program budgeting would substitute one set of difficulties for another. But the gains in the direction of program analysis and academic decision-making might well make the new set of difficulties much more tolerable than those that presently mar the usefulness of the University's accounting system.

It should be emphasized here that the University of California is not unique among institutions of higher education in its accounting problems. The difficulties are equally as great or greater in the accounting practices of the state colleges and the junior colleges and, apparently, among most private institutions as well. The focus of this discussion has been directed to the University only for illustrative purposes and because it was the particular subject of the Auditor General's study. Ideally, the goal should be a set of accounting practices which would provide for maximum comparability in program analysis among all California institutions of higher education. The Committee notes with interest that the Western Interstate Commission on Higher Education may sponsor a regional program aimed at improved academic accounting systems, evidently motivated by many of the particular difficulties noted above.

The Tuition Simulation Model

Depending upon the amounts of many involved, changes in the costs of attending college are likely to change the level and distribution of demand for college. There is no reason to expect that the traditional rule of "rising prices and declining sales" is not applicable to education at least for some levels of price change. Since tuition charges are among several other revenue sources under active consideration, the Committee thought it proper to organize the few scattered bits of information available on the price-demand characteristics for higher education and to develop an apparatus which would permit the orderly exploration of conjectures regarding the costs and other consequences of hypothetical changes to the higher educational price structure.

The specific apparatus, which we have called the Tuition Simulation Model, is a system of equations programmed for computer solution and provided with calculation routines which permit specific human judgments or estimates to be mixed with the results of technical assumptions stated in mathematical form. The model does not predict what the future will be; it calculates the consequences of many specified, complex assumptions taken together.

The model performs two separate types of calculations:

1. The Transition Pattern – Starting with a distribution of students specified as to classes of institutions, income characteristics, class levels and places of residence, a set of out-of-pocket costs to attend college, and a specific set of changes to these costs, the model first redistributes the total collegiate enrollments of the state according to the price-demand assumptions employed. If a high tuition is hypothesized for the University and very low or no tuitions at other public institutions, the model shifts students from the University to other institutions and from collegiate enrollment to other activities. Shifts are also generated respecting the place of residence, since it is less costly in out-of-pocket terms to live at home with one's family than to live on campus in a dormitory. The magnitude and direction of the predicted shifts depend upon the income of the students, the charges hypothesized at other institutions, the class level of students and the price-demand assumptions.

   This component of the model simulates the number and location of students by institution, class level, and place of residence in response to a hypothetical set of assumptions regarding tuition, grants, and related matters.

2. The Financial Consequences – The second component of the model notices the differences between the original distribution and the new distribution and multiplies these differences by unit cost factors appropriate to the several institutions and class levels. It also tabulates changes in the magnitude of private costs and in the number of students who move out of the higher education system in California altogether. These cost consequences are expressed as increases or decreases from an hypothesized base case budget, which represents an estimate of what public and private costs would be in the future without any tuition changes. The predictions are run for five separate years into the future.

   In considering tuition, loans and grants are considered as separate components for which the magnitude, terms and conditions, average size, etc., can be separately specified. The effects of various combinations of price changes, student aid programs and the like can thus be explored as they affect the state General Fund, the property tax base which supports junior colleges, and the privately borne costs of higher education. The total enrollments in the state's system are calculated, as well as the distribution of these enrollments among the segments by class level.

Because of the extreme scarcity of applicable data respecting changes in educational demand as a function of changes in educational prices, it was necessary to use the best estimates that could be developed and to test these estimates against the results from questionnaires distributed to students and their families in the spring of 1967. Materials from a doctoral dissertation by Stephen A. Hoenack which deals in part with estimating the price-demand characteristics applicable to the University of California were also used. In its current form, the model is consistent with the few empirical findings available.

Respecting the cost consequences of shifts in enrollments among institutions and over time, a "base case forecast" was developed to be roughly equivalent to what might be expected in higher education in the absence of any new policies and given the continuation of existing trends and known plans. The base case financial assumptions were derived from a variety of institutional planning and budgeting documents from which estimates of budgets, enrollments and unit costs were derived, as described in Section 4. In using this "base case" as a point of departure for estimating the magnitude and character of possible policy-induced changes, it is not assumed that there is anything inevitable or necessarily desirable about the base case assumptions themselves. The shape of the short-range future of higher education is a matter for decision as well as for conjecture and forecast.

In addition to using the model as a device for exploring the consequences of a large number of technical and policy assumptions, the model program permits evaluations to be made of the sensitivity of educational costs to specified incremental changes in enrollment assumptions, in unit cost assumptions, or in the detailed price-demand characteristics assumed for various classes and conditions of students. Finally, the model has been used in a preliminary way to explore the relationships between gross tuition revenues and tuition rates. It was found that gross revenues continue to increase up to a tuition rate of $140 per year at each public segment of higher education. Beyond this rate, gross revenues decline as students are forced out of the system in numbers disproportionate to the revenues produced at higher rates from those students who remain.

It is possible to extend this line of analysis further and pose questions regarding the combination of tuition rates, loan and grant packages, enrollment assumptions, etc., which will minimize total public expenditure for any specified level and distribution of enrollments at the public institutions.

The great limitations of this model or of any other must be clearly stated. First, the hard data used in calibrating the specific equations are meager in the extreme. Secondly, the kind of limited insights which the model produces are by no means the only or even the major contributions to decisions on educational policies. Finally, the unavoidable elements of rather arbitrary assumptions guarantee that exact and detailed resemblances between the model and the world are not to be had. Despite all these important and necessary qualifications, the model may prove useful during the 1968 Session and beyond as one of several sources of insight regarding the complicated and interacting effects to be expected if major price changes are to be considered in the future within the education system.

Table 6.1 recapitulates some of the results of model runs respecting the enrollment changes and certain dollar consequences associated with illustrative tuition cases. The entries in the table are the differences between the base case and what might be expected

Table 6.1 **ILLUSTRATIVE RESULTS FORM THE TUITION SIMULATION MODEL**

CASE 003. $100/YEAR TUITION AT EACH PUBLIC SEGMENT; NO ADDITIONAL PROGRAMS OF GRANTS, LOANS OR STUDENT AID.

CASE 004: $250/YEAR TUITION AT THE UNIVERSITY; $185/YEAR AT THE STATE COLLEGES; NO JUNIOR COLLEGE TUITION; NO ADDITIONAL STUDENT AID.

CASE 010: THE SAME AS CASE 004 BUT WITH US GRANTS AVERAGING $560, SC GRANTS AVERAGING $460, AND AVERAGE LOANS OF $1000 AVAILABLE; ALL GRANT AND LOAN FUNDS TO BE DRAWN FROM HALF OF THE GROSS TUITION REVENUES.

CASES		ENROLLMENT CHANGES					COST CHANGES ($ MILLIONS)		
		UC	SC	JC	PRIVATE	TOTAL	PRIVATE	GENERAL FUND	LOCAL
Base Case 1967-1968		90,500	184,000	495,000	87,000	856,500	1,289.	614.	218.
Case 003	Δ #	— 3,000	— 4,500	— 18,000	-0-	— 25,500	+ 33.	— 86.	— 51.
1967-1968	Δ %	— 3.2%	— 2.4%	— 3.6%	0.0%	— 3.0%	+ 2.6%	— 13.6%	— 23.5%
Case 003	Δ #	— 3,500	— 5,500	— 25,500	-0-	— 34,500	+ 46.	— 89.	— 58.
1971-1972	Δ %	— 3.1%	— 2.4%	— 3.6%	0.0%	— 3.0%	+ 2.7%	— 7.3%	— 17.3%
Case 004	Δ #	— 10,000	— 11,500	+ 500	+ 100	— 20,900	+ .5	—151.	+ .5
1967-1968	Δ %	— 11.2%	— 6.2%	+ 0.1%	+ 0.1%	— 2.4%	0.0%	— 24.6%	+ 0.3%
Case 004	Δ #	— 12,000	— 14,500	+ 1,000	+ 100	— 25,400	+ 1.5	—148.	+ .5
1971-1972	Δ %	— 10.9%	— 6.2%	+ 0.1%	+ 0.1%	— 2.2%	+ 0.1%	— 12.2%	+ 0.1%
Case 010	Δ #	— 6,000	— 8,000	+ 500	-0-	— 13,500	+ 5.	— 10.	+ .5
1967-1968	Δ %	— 6.7%	— 4.3%	+ 0.1%	0.0%	— 1.6%	+ 0.4%	— 16.8%	+ 0.2%
Case 010	Δ #	— 7,500	— 10,000	+ 500	-0-	— 17,000	+ 7.	—102.	+ 0.2
1971-1972	Δ %	— 6.6%	— 4.4%	+ 0.1%	0.0%	— 1.5%	+ 0.4%	— 11.7%	+ 0.1%

(given all the assumptions and all their uncertainties) under the hypothetical case in point. For reference, the base case assumptions are given in the first row of the table.

Because capital outlays are assumed, unrealistically, to be instantaneous with increases in enrollments, the first year of the five-year forecasting cycle shows large and uncharacteristic decreases in capital expenditures as a response to the lowered enrollments projected in this particular run of the model. For this reason Table 6.1 also shows the results obtained for the last year of the forecasting cycle. The numbers in Table 6.1 are intended only to illustrate the kind of output available from the model. The numbers in themselves have no more value than is placed on the general quality of the many assumptions used in generating the results. These assumptions are described in detail in Appendix D so that the Committee might receive the benefit of general and specific criticisms of the model and suggestions for its use, alteration, or abandonment.

Appendices

Appendix A

Texts of Assembly Concurrent Resolutions Establishing and Continuing the Joint Committee on Higher Education

ACR 156
1965 Regular Session

Whereas, The Master Plan for Higher Education has been in effect in the State of California since 1960; and

Whereas, The Legislature has not since the inception of the Master Plan conducted a comprehensive review of its operation and the degree to which the intent of the Legislature has been carried out through the Master Plan; and

Whereas, Changes in one segment of higher education cannot be undertaken without legislative consideration of the effects of these changes upon the entire system of higher education in California; now, therefore, be it

Resolved by the Assembly of the State of California, the Senate thereof concurring, as follows:

1. The Joint Committee on Higher Education is hereby created and authorized and directed to ascertain, study and analyze all the facts relating to the development of higher education under the Master Plan during the period of 1960-65; determine what reevaluation, if any, is necessary for Master Plan recommendations for the years 1965-75; explore the needs of higher education for the years 1975-80; and report thereon to the Legislature, including in its report its recommendations for appropriate legislation and change, if any, in the present law.

2. The committee shall consist of five Members of the Assembly appointed by the Speaker thereof, and five Members of the Senate, appointed by the Committee on Rules thereof. Vacancies occurring in the membership of the committee shall be filled by the appointing powers.

3. The committee is authorized to act during this session of the Legislature, including any recess, and after final adjournment until the commencement of the 1967 Regular Session, with authority to file its final report not later than the fifth legislative day of that session.

4. The committee and its members shall have and exercise all of the rights, duties and powers conferred upon investigating committees and their members by the provisions of the Joint Rules of the Senate and Assembly as they are adopted and amended from time to time at this session, which provisions are incorporated herein and made applicable to this committee and its members.

5. The committee has the following additional powers and duties:

(a) To select a chairman and a vice chairman from its membership.

(b) To contract with such other agencies, public or private, as it deems necessary for the rendition and affording of such services, facilities, studies and reports to the committee as will best assist it to carry out the purposes for which it is created.

(c) To cooperate with and secure the cooperation of county, city, city and county, and other local law enforcement agencies in investigating any matter within the scope of this resolution and to direct the sheriff of any county to serve subpoenas, orders and other process issued by the committee.

(d) To report its findings and recommendations to the Legislature and to the people from time to time and at any time, not later than herein provided.

(e) To do any and all other things necessary or convenient to enable it fully and adequately to exercise its powers, perform its duties, and accomplish the objects and purposes of this resolution.

6. The sum of one hundred thousand dollars ($100,000) or so much thereof as may be necessary is hereby made available from the Contingent Funds of the Assembly and Senate for the expenses of the committee and its Members and for any charges, expenses or claims it may incur under this resolution, to be paid from these contingent funds equally and disbursed, after certification by the chairman of the committee, upon warrants drawn by the State Controller upon the State Treasury.

ACR 56
1966 First Extraordinary Session

Whereas, The 1965 Legislature recognized the need for a thorough and long-range study of California's system of higher education; and

Whereas, The Joint Committee on Higher Education was thereby created by the Legislature through the adoption of Assembly Concurrent Resolution No. 156 (Resolutions Chapter 216, Statutes of 1965); and

Whereas, This joint legislative committee is authorized and directed to ascertain, study and analyze all the facts relative to the development of higher education in California under the master plan during the period 1960-1965; determine what reevaluation, if any, is necessary for master plan recommendations for the years 1965-75; explore the needs and requirements of higher education for the years 1975-80; and report thereon to the Legislature, including in its report recommendations for appropriate legislative change, if any, in the present law; and

Whereas, Such a study, being the first comprehensive review of the Master Plan since its inception, will have an important and long-range influence on the course of California higher education in the future; and

Whereas, Proper planning and the selection of a highly qualified staff for this study is of the utmost importance, has been commenced by the joint committee, but has yet to be completed; and

Whereas, In the interests of a thorough and objective study of higher education in this state it will be necessary to extend the authorization of the Joint Committee on Higher Education past the original reporting date of January, 1967, and therewith extend the committee's reporting date; now, therefore, be it

Resolved by the Assembly of the State of California, the Senate thereof concurring, That in addition to all authority, rights and duties heretofore conferred on it, the Joint Committee on Higher Education is authorized to act during the 1967 Regular and 1968 Regular (Budget) Sessions of the Legislature, including any recesses therein, and after the final adjournment thereof, with authority to file its final report no later than the fifth legislative day of the 1969 Regular Session of the Legislature; and be it further

Resolved, That such moneys as have previously been made available for the expenses of the committee and its members shall continue to be available during the period of its extended existence provided by this resolution.

ACR 16
1967 Regular Session

Whereas, The Master Plan for Higher Education has been in effect in California since 1960, and

Whereas, The Legislature has not, since the inception of the Master Plan, conducted a comprehensive review of its operation and the degree to which the intent of the Legislature has been carried out in the Master Plan; and

Whereas, Changes in one segment of higher education cannot be undertaken without an effect upon other segments of higher education in California; and

Whereas, The 1965 Legislature recognized the need for a thorough and long-range study of California's system of higher education, and the Joint Committee on Higher Education was thereby created by the Legislature through the adoption of Assembly Concurrent Resolution No. 156 (Resolutions Chapter 216, Statutes of 1965); and

Whereas, This joint legislative committee is directed to present a final report on the subjects under its jurisdiction to the Legislature no later than the fifth legislative day of the 1969 Regular Session; now, therefore, be it

Resolved by the Assembly of the State of California, the Senate thereof concurring, That, in addition to its study of the implementation of the Master Plan for Higher Education, the Joint Committee on Higher Education is hereby specifically directed to include in its studies and examination of the financing of higher education in California, including the desirability and feasibility of instituting tuition charges and the effect such charges upon the California student population, upon the state's system of higher education and upon its components, and upon the economy of the entire state; and be it further

Resolved, That the committe is directed to report to the Legislature on the matter of tuition in higher education not later than the fifth legislative day of the 1968 Regular Session; and be it further

Resolved, That the Speaker of the Assembly is hereby authorized to appoint six members and the Senate Committee on Rules is hereby authorized to appoint six members to a broadly based advisory commission, representative of all segments of California society, to assist the committee in its studies; and be it further

Resolved, That, in addition to any money heretofore made available, the sum of two hundred fifty thousand dollars ($250,000), or so much thereof as may be necessary, is here made available from the contingent funds of the Assembly and Senate for the expenses of the committee and its members, and for any charges, expenses, or claims it may incur under this resolution or Assembly Concurrent Resolution No. 156 of the 1965 Regular Session, to be paid from these contingent funds equally and disbursed after certification by the chairman of the committee upon warrants drawn by the State Controller upon the State Treasury.

Appendix B

Section Notes and Annotations On Data Sources

Each numerical footnote in the text is listed in this Appendix in the order in which it appears in the text. Sources of information and annotations for tables and charts are included in these footnotes.

1. Table 3.1
Enrollment: Department of Finance, *Report of Total and Full-Time Enrollments in California Institutions of Higher Education* (Annual). For years prior to 1961, California State Department of Education, *Full-Time and Part-Time Students in Institutions of Higher Learning*. Reports prepared by each of the AICCU institutions at the request of the JCHE.

Number of institutions: University and state colleges —Publications of the segments of California public higher education; public junior colleges—California State Department of Education, *Directory of California Public Junior Colleges 1967-1968.*

AICCU Institutions—Members of the Association of Independent California Colleges and Universities as of December 1, 1967.

Note—The enrollment figures in Table 3.1 are for "head count" or total individuals and include both full-time and part-time students. The figure of 77 junior colleges is an approximation since at least 10 additional junior colleges are in various stages of formation and planning. The private college figures include only institutions which were members of the Association of Independent California Colleges and Universities on December 1, 1967. This usage is followed through this report.

2. Allan M. Cartter, editor, *American Universities and Colleges*, ninth edition (Washington: American Council on Education, 1964) p. 26.

3. Table 3.2
Population: Department of Finance, *California Population, 1966* and *California Population Projections 1965-2000.* Also, *California Statistical Abstract.*

Note—The population figures for the years 1900-1901 and 1910-1911 are for total population, not civilian population.

Enrollment, Total: 1957-58 to 1966-67—same as in Table 3.1, see footnote number (1). 1967-68 to 1971-72—University of California, Office of Analytical Studies; California State Colleges, Department of Finance, unpublished projections; California junior colleges, Department of Finance, unpublished projections of day students, conversion to total by JCHE; AICCU institutions, projections based on current trends in AICCU member institutions. 1920-21 to 1956-57—publications of the segments of California public higher education and the California Department of Education. 1900-01 to 1910-11—total figures are based on those in the *United States Statistical Abstract.*

Note—For the period 1920-21 to 1956-57 a correction factor of .15 was subtracted from total enrollment to adjust for junior college adult education. Also, private college enrollment was estimated from full-time enrollment for the years 1950-51 to 1956-57. Prior to 1950-51 the private college component of total enrollment is estimated.

Enrollment, Full-Time: 1957-58—same as in Table 3.1, see footnote number (1). 1966-67—based on total enrollment projections, University 95%, state colleges 64% in 1967-68 to 68% in 1971-72, public junior colleges 41%, and private sector 72%.

1950-51 to 1956-57—Regents of the University of California, *A Study of Faculty Demand and Supply in California Higher Education.*

4. Table 3.3
United States Census 1960; California Department of Finance; Allan M. Cartter, editor *American Universities and Colleges,* ninth edition (Washington: American Council on Education, 1964), p. 26.

5. Table 3.4
Same as Table 3.1, see footnote (1).

6. Table 3.5
Same as Table 3.1, see footnote (1). For years prior to 1957-58, Regents of the University of California, *A Study of Faculty Demand and Supply in California Higher Education.*

Note—AICCU figures differ due to inclusion of non-AICCU members for years prior to 1957-58.

7. Table 3.6
Same as Table 3.1, see footnote (1).

8. Table 3.7
Same as Table 3.1, see footnote (1).

9. Table 3.7
Same as Table 3.1, see footnote (1).

10. Table 3.9
Enrollment: same as Table 3.1, see footnote (1).

Men and women age 18-24; 1957-58 to 1959-69—Department of Finance, Financial and Population Research Section, Special Report, *California's Civilian Population, 1950 to 1960* (November 5, 1962). 1960-61 to 1966-67—Department of Finance, *California Population 1966.*

11. Chart 3.10
University of California: this data comes from three unpublished surveys made in the Spring of 1967. The Office of Analytical Studies of the University of California conducted one of these studies. It covered eight of the University campuses, excluding the Berkeley campus. The other two studies were conducted by the Office of Institutional Research at the University of California, Berkeley campus. These studies consisted of a survey of Berkeley graduate students and a survey of Berkeley undergraduate students.

California State Colleges: *A First Partial Report on Student Demographic Characteristics and Financial Aid* (September 15, 1967).

The age grouping of students in California public junior colleges is based on figures received from individual junior colleges and the Bureau of Junior College Education, California Department of Education.

12. California State Colleges, *A First Partial Report on Student Demographic Characteristics and Financial Aid* (September 15, 1967).

13. These and other barriers to higher education are discussed in greater detail in the report on student aid prepared for the Committee by Dr. Martyn.

Very little is known of the socio-economic characteristics of California college students, especially with respect to historical comparisons. The Committee is indebted to the following recent research efforts which produced limited socio-economics data currently available:

1) SCOPE. This study, "School to College: Opportunities for Post-Secondary Education" is being conducted by the Center for Research and Develment in Higher Education at the University of Californa, Berkeley, in cooperation with the College Entrance Examination Board. It follows samples of high school students into and through college in California, Illinois, Massachusetts, and North Carolina.Information from the California sample of 1966 high school graduates and from respondents to a special questionnaire distributed in the spring of 1967 to the parents of the 1966 high school graduates provide an important source of information on what happens to students over the high school-to-college transition point.
2) CCHE study. In cooperation with the public segments, the Coordinating Council undertook a study on the family background, economic circumstances, academic attainments, and college-going plans of a sample of high school seniors in public high schools in 1967. While the sample was constructed differently than that used by SCOPE, the grounds were roughly comparable response characteristics.
3) Also in the spring of 1967, the College Entrance Examination Board conducted a study of student aid, under contract with the Regents of the University of California. This study used CCHE data, SCOPE data, and information from questionnaires sent to University students in the early spring of 1967.
4) The state colleges also developed information on the social, racial, and economic characteristics of their students in the spring of 1967.

Because these several studies have been independently published, no attempt has been made to summarize their findings.

14. CCHE study: CCHE Staff, *Financial Assistance Programs for California College and University Students,* 67-13 (second revision), October 31, 1967, pp. 1-9 and 1-10.

Note—in the spring of 1967 the CCHE, the University of California, and the California State Colleges cooperated in conducting a survey of a selected sample of 16,000 high school seniors from 400 California high schools. Of the 16,000 selected in the sample, 8,150 responded to the survey. However, there were two types of non-response: 1) All the seniors in the high schools which chose not to cooperate or could not cooperate with the study, and 2) the seniors who did not respond even though the high school in which they were enrolled did cooperate with the study.

Unfortunately, the CCHE sample was blind; that is, nothing is known about the names of the individual students in the sample, so that it is not possible to follow these students and compare what they actually did do with what they said their plans were.

To the best of the Committee's knowledge, no study has been conducted to evaluate the reliability of the results.

Those who did respond to the survey were categorized as 1) those eligible to attend the University of California, 2) those eligible to attend a California State College, but not the University, and 3) those eligible to attend a junior college only. The method of categorizing was to send transcripts of those who responded to the University. The University selected those eligible to attend, sending the remainder of the transcripts to the state college authorities who made a similar selection. Those not "accepted" by the University or state colleges were then classified as junior college eligibles.

SCOPE PROJECT: This data comes from unpublished SCOPE material by courtesy of Dr. Dale Tillery, Chief Investigator, SCOPE Project.

Note—In the spring of 1967, the SCOPE Study of the University of California Center for Research and Development in Higher Education asked the parents of a sample of students who had been high school seniors in public and private high schools for the preceding school year about the actual college attendance of their children for each of the three preceding quarters. More than 50% of the parents did NOT respond.

The scale used in stratifying the original population of high school seniors by academic attainment was a weighted average of scores and high school grade point average. It must be remembered that this basis for stratification is different from, although roughly similar to, the one used in the CCHE Study.

(To avoid confusion it should be reiterated that SCOPE here refers to the study "School to College: Opportunities for Post-Secondary Education" which is being conducted by the Center for Research and Development in Higher Education at the University of California, Berkeley. (It does NOT refer to the State Committee on Public Education).

The two surveys indicated that something less than 10% of all high school graduates with high achievement records will *not* attend or plan to attend college as freshmen. These estimates are probably low because of the biases associated with the large non-responding components of the samples. Typically, the non-respondents to a survey are those not concerned or negatively concerned with the subject matter, or with the organization sponsoring the survey. In this case, lack of concern would be positively correlated with non-attendance. A slight source of upward bias may exist in the fact that the SCOPE data reflect actual attendance just one year later, while it is known that many students do not attend college in the first year after their high school graduation but do so in subsequent years. The downward bias is the most pervasive, however, so that the figures should be regarded as low by a significant but unknown amount.

15. Table 3.11

See footnote (14) for source of information.

16. Chart 3.12

See footnote (14) for source of information.

17. Two different methods of classifying academic degrees are in general use today, and both may be employed for the purpose of developing the fullest possible picture of California's academic productivity. The system used by the U. S. Department of Health, Education, and Welfare groups degrees according to general kind: bachelors, first professional (including law and medicine), masters, and doctorates. For many purposes, the HEW data combine bachelor's and first professional degrees.

The second system classifies degrees not primarily by kind but by years of schooling required: four years (the normal bachelors degree), five-six years (masters and some professional degrees), and seven-plus years (law, medicine, and most academic doctorates). Data used under this system were assembled by the Committee directly from reports of the University of California, the California State Colleges, the State Board of Education, and the Association of Independent California Colleges and Universities. The two systems obviously serve different analytical purposes, and the Committee has sought to gain the advantages of both, at some occasional sacrifice to comparability. (Totals under the two reporting systems are not always compatible because of differences in numbers of reporting institutions.)

18. Table 3.13

University of California: Prior to 1959—University of California, *The University of California Register*. 1959-67—University of California, *Statistical Summary of* Students and Staff (annual).

Califoria State Colleges: California State Colleges, Office of the Chancellor, Division of Institutional Research, *Statistical Report of the California State Colleges* (annual).

AICCU Institutions: Data was obtained directly from AICCU member institutions by JCHE.

19. Table 3.14

Degrees: United States Department of Health, Education and Welfare, *Earned Degrees Conferred 1963-64* (United States Printing Office, Washington, 1966.

Enrollment: United States—*U. S. Statistical Abstract*, 1966-67; California—Same as Table 3.1, see footnote (1).

20. Table 3.15

Degrees: Same as Table 3.13, see footnote (18).
Enrollment: Same as Table 3.1, see footnote (1).

21. The present number and distribution of degrees awarded in the various fields in California are shown in Table B. 1 of this Appendix, which uses the Department of Health, Education and Welfare classification of degrees, and also that department's aggregates of subject fields (i.e., biological sciences includes such individual subject areas as botany, biology, and zoology). The three most active subject fields leading to the bachelors degree are education, social sciences, and business and commerce, both for the public and private institutions. Social science degrees, in fact, are among the top three fields for all four levels of degrees in the public segment, and for three of the four levels in the private segment. Education also appears among the top three subject fields in three of the four degree levels in the private segment. The private segment produces more graduate degrees in religion and in engineering, whereas the public segment produces more doctorates in the physical and biological sciences.

Trends in degree production by subject field from 1958-59 to 1963-64, both nationally and for California, are shown in Table B. 2 of this Appendix. California is increasing its aggregate output of degrees at each level faster than is the United States. Leading state trends correspond with leading national trends at a number of points. Engineering and mathematics are the two fastest-growing undergraduate fields both here in California and nationwide. Engineering, mathematics and business and commerce are among the five fastest-growing subjects for doctorates at both the national and state levels. At the undergraduate level, California is much more active than the nation as a whole in such areas as agriculture, forestry, geography and in religion. Education is the only field in which California lags behind national expansion at all degree levels.

According to the new report of the National Academy of Sciences referred to in Section III of this report, the Berkeley campus of the University of California now leads the nation in award of doctorates in the following fields: mathematics; physics and astronomy; biochemistry; and botany, zoology, and general biology.

Table B.1 DISTRIBUTION OF DEGREES, NUMBER AND PERCENTAGE BY FIELD, LEVEL AND SECTOR, CALIFORNIA HIGHER EDUCATION, 1963-1964

[redacted]

LEVEL OF DEGREE: SECTOR	BACHELORS				FIRST PROFESSIONAL				MASTERS				DOCTORATES			
	PUBLIC		PRIVATE		PUBLIC		PRIVATE		PUBLIC		PRIVATE		PUBLIC		PRIVATE	
Field of Study	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	443	1.7	1	*	......	......	......	......	101	1.8	......	......	16	1.9	......	......
Architecture	34	.1	22	.2	89	6.8	44	2.1	10	.2	......	......	......	......	......	......
Bioligical Sciences	1,135	4.4	486	4.9	5	.4	......	......	149	2.7	44	1.4	157	18.2	32	5.0
Business & Commerce	2671	10.4	1,392	14.0	1	.1	431	20.3	453	8.1	192	6.0	20	2.3	15	2.4
Education	6,218	24.2	1,077	10.8	......	......	27	1.3	1,859	33.0	1,015	31.8	98	11.3	116	18.2
Engineering	1,903	7.4	863	8.7	......	......	......	......	655	11.6	925	28.9	90	10.4	153	23.8
English & Journalism	1,586	6.2	739	7.4	......	......	......	......	306	5.4	131	4.1	22	2.5	23	3.6
Fine & Applied Arts	1,487	5.8	748	7.5	......	......	2	.1	326	5.8	142	4.4	7	.8	29	4.5
Foreign Lang. & Lit.	669	2.6	291	2.9	......	......	1	*	150	2.7	67	2.1	39	4.5	17	2.7
Forestry	74	.3	......	......	——	......	——	——	3	.1	......	......	......	......	......	......
Geography	137	.5	6	.1	......	——	......	......	24	.4	2	.1	8	.9	......	......
Health Professions	582	2.3	340	3.4	356	27.1	682	32.1	329	5.8	69	2.2	5	.6	3	.5
Home Economics	328	1.3	42	.4	......	——			13	.2	4	.1	1	.1	......	......
Law	......	——	10	.1	549	41.8	414	19.5	13	.2	17	.5	......	......	......	......
Library Science	13	.1	——	......	154	11.7	110	5.2	10	.2	......	......	......	......	......	......
Math Subjects	816	3.2	257	2.6	......	......	——	——	177	3.1	100	3.1	54	6.2	35	5.5
Merchant Marine	41	.2	......	......	......	......	......	......	——	......	......	......	......	......	......	......
Philosophy	139	.5	218	2.2	......	——	......	......	27	.5	6	.2	4	.5	6	.9
Physical Science	801	3.1	379	3.8	......	......	......	......	215	3.8	99	3.1	171	19.8	86	13.5
Psychology	983	3.8	421	4.2	......	......	......	......	182	3.2	36	1.1	51	5.9	30	4.7
Religion	5	*	274	2.8	......	......	354	16.6	......	......	68	2.1	......	......	22	3.5
Social Sciences	5,154	20.1	2,313	23.2	158	12.0	62	2.9	581	10.3	270	8.5	116	13.4	65	10.2
Trade & Industrial Training	141	.6	1	*	——	......	——	——	2	*	......	......	......	......	......	......
Miscellaneous Fields	318	1.2	78	.8	......	......	......	——	46	.8	9	.3	6	.7	6	.9
Totals	25,678	100.0	9,958	100.0	1,312	100.0	2,127	100.0	5,631	100.0	3,196	100.0	865	100.0	638	100.0

*Less than 0.05%.

Source: Same as in Footnote (19).

Table B.2 [redacted]

PERCENTAGE CHANGE IN DEGREES CONFERRED BY FIELD, UNITED STATES AND CALIFORNIA, 1963-1964, OVER BASE YEAR 1958-1959

	BACHELOR'S AND FIRST PROFESSIONAL		MASTERS		DOCTORATES	
	National	State	National	State	National	State
Agriculture	— 12.4	+ 7.2	+ 12.9	+ 94.2	+ 42.3	+ 60.0
Architecture	+ 20.2	+ 28.6	+ 32.1	28.6	0.0	....
Biological Sciences	+ 50.7	+ 53.8	+ 64.3	+ 55.6	+ 55.5	+ 43.2
Business and Commerce	+ 11.0	+ 32.0	+ 43.7	+124.0	+100.7	+250.0
Education	+ 28.5	+ 20.4	+ 30.0	+ 25.8	+ 45.5	+ 15.7
Engineering	— 7.6	+ 18.1	+ 60.3	+ 77.3	+137.1	+237.5
English and Journalism	+ 70.1	+ 96.7	+ 71.4	+ 69.4	+ 49.2	+104.5
Fine and Applied Arts	+ 27.2	+ 28.9	+ 38.0	+ 34.5	+ 52.9	+111.8
Foreign Lang. & Lit.	+159.4	+154.9	+115.3	+223.9	+ 55.2	+166.7
Forestry	+ 7.5	+ 80.5	+ 17.8	— 78.6	+103.0	....
Geography	+ 43.5	+115.2	+ 69.1	+188.9	+ 31.4	+100.0
Health Professions	+ 4.7	+ 12.6	+ 29.0	+123.6	+ 25.5	+300.0
Home Economics	+ 9.3	+ 12.5	+ 17.5	0.0	+ 57.7	0.0
Law	+ 11.1	+ 35.0	+ 29.2	+233.3	+ 7.1	....
Library Science	+ 44.2	+ 60.1	+239.0	+233.3	+116.7	....
Mathematical subjects	+107.1	+118.5	+138.8	+185.6	+111.3	+178.1
Military Sciences*	+ 12.8	....	....	....	....	....
Philosophy	+ 52.5	+ 53.2	+ 41.6	+200.0	+ 37.0	+ 42.9
Physical Science	+ 13.4	+ 13.8	+ 42.6	+ 31.4	+ 35.5	+ 43.6
Psychology	+ 80.9	+ 89.2	+ 63.8	+159.5	+ 47.9	+ 88.4
Religion	— 1.0	+ 17.9	+ 13.5	— 64.6	+ 15.9	+ 46.7
Social Science	+ 60.4	+ 77.8	+ 72.2	+ 57.0	+ 49.9	+ 49.6
Trade and Industrial Training**	+ 41.8	— 4.7	....	....	....	....
Misc. Fields	+ 33.5	— 11.7	+106.5	+260.0	+107.1	+1100.0
All Fields	+ 30.5	+ 40.5	+ 45.3	+ 56.2	+ 54.8	+ 72.0
Total # of Degrees Conferred in Year 1963-64	499,647	39,074	101,122	8,826	14,490	1,503

*Not included in totals.

**Graduate data not collected for this area before 1960-61.

Source: Same as in Footnote (19).

22. Table 315
Same as Table 3.1, see footnote (1).

23. Table 3.17
Same as Table 3.1, see footnote (1).

24. University of California, Office of Analytical Studies, *The Efficiency of Graduate Education* (undated draft).

25. Table 3.18
Same as Table 3.1, see footnote (1).

26. If graduate instructional costs are expressed in relation to graduate degrees awarded and not in relation to graduate students enrolled, an extreme variation is found between fields like physics and others like economics or languages. Because low rates of degree attainment are found in programs thought to be "low cost" on a per-student basis, there is an impressive reversal of what fields seem costly and which seem inexpensive when degrees are substituted for students as the cost units. The humanities, with typically low-per-student costs, turn out to have high costs per graduate degree granted, costs which are in the same range or higher than those in engineering or the physical and biological sciences where the per-student costs are far higher but the degree attainment rates are also higher.

27. Table 3.19
The index number series were computed by dividing each datum in a particular series by the datum for 1957-58, producing a series in which 1957-58 equals 100. The rest of the index numbers are the appropriate multiples of 1957-58. Sources are the same as in Chart 3.20, see footnote (28).

28. Chart 3.20
Total Civilian Population: California Department of Finance, *California Population 1966.*

Civilian population age 18-25: 1958-59—California Department of Finance, "California's Civilian Population, 1950-60" (mimeo, 1962); 1960-64—California Department of Finance, *California Population 1966;* 1965-67—Advanced unpublished data furnished to the JCHE by the Department of Finance for this study.

Personal Income: 1958-64—California State Treasurer, *California Bonds* (1967); 1965-67—California Governor's Budget.

Note—All above data are for the calendar year, not the fiscal year.

Total and Full-Time Enrollments: Same as Table 3.1, see footnote (1).

General Fund Revenue: California Governor's Budget (1959-60 to 1967-68).

Note—Transfers to the General Fund are excluded.

Total State Support for Higher Education: Same as Table 3.21, see footnote (29).

Note—Only funds given to the three public segments are included; does not include State Scholarship Commission funds, CCHE funds, or Maritime Commission funds.

29. Table 3.21
University of California: Operating and capital—data prepared for the Legislative Analyst by the University of California Vice-President for Business and Finance, dated October 25, 1967.

California State Colleges: Operating and capital—from the Governor's Budget, "actual" column data was utilized except for 1967 when only estimates were available.

California Public Junior Colleges: 1958-60—estimates for operating and capital expenditures; data prepared by the Legislative Analyst and based upon junior college statistics contained in *Financial Transactions of California School Districts* (annual), State Controller's Office. 1967-67—data prepared by the Bureau of School Apportionments and the Bureau of Junior College Education, State Department of Education.

AICCU Institutions: Reports prepared by each of the AICCU institutions at the request of the JCHE.

30. Table 3.22
Same as Table 3.21, see footnote (29).

31. Table 3.23
Same as Table 3.21, see footnote (29).

32. In its review of large-scale regularities and trends in higher education and its modes of support, the Committee has learned to employ great caution in the use of unit cost measures. With respect to the numerator of these fractions, there are formidable problems of definition and of accounting to be faced in reaching a decision on what expenditures are to be deemed relevant and applicable to the production of the units in question. Are funds expended for research or for specialized medical instruction to be lumped in with auxiliary enterprise and other expenditures, for example, and all divided by total students?

With respect to the divisor, there are problems of comparable difficulty. What are the proper units of activities or of outputs to be used as aids to the comprehension of educational operations? If total students or full-time students are used, the selection ignores the vast differences between students at different levels, in different programs of instruction, of different levels of ability, aspirations and academic promise. If degrees granted are used, the decision ignores the values associated with education not leading to a degree as well as the important differences among degrees of different kinds and levels. Notwithstanding these massive qualifications and the several others which apply to the interpretation (or to the lack of any possible interpretation) of highly aggregated unit cost measures, the Committee has developed the unit cost values summarized in Table B.3 in this Appendix.

This table provides cost-per-student and cost-per-degree calculations in both current and 1957-58 constant dollars. In each case estimates of total enrollments are used, as are estimates of total institutional expenditures for all purposes.

To dampen the effects of year-to-year variations in cost data, the average of 1957-58 and 1958-59 has been used as a starting value for the seven-year base period, and the average of 1964-65 and 1965-66 used for the end of the period. Complete data were not available for more recent years.

For all segments except the state colleges, the unit costs (as calculated) increased in both current and constant dollar terms. Because the elements which are reflected in these unit cost measures are not comparable within a segment over the base period.

Table B.3

AGGREGATE AVERAGE UNIT COST MEASURES, CALIFORNIA HIGHER EDUCATION, 1957-1959 AND 1964-1966*

	1957-1959 AVERAGE CURRENT DOLLARS	1964-1966 AVERAGE CURRENT DOLLARS	1964-1966 AVERAGE 1957-1959*** CONSTANT DOLLARS	PERCENT CHANGE c/a
	a	b	c	d
UNIVERSITY OF CALIFORNIA				
COST PER STUDENT	$ 4,244	$ 6,625	$ 5,884	139
COST PER DEGREE**	18,662	31,840	28,277	152
CALIFORNIA STATE COLLEGES				
COST PER STUDENT	1,518	1,261	1,119	—26
COST PER DEGREE	9,708	8,233	7,312	—24
PUBLIC JUNIOR COLLEGES				
COST PER STUDENT	517	626	556	108
AICCU INSTITUTIONS				
COST PER STUDENT	2,650	4,123	3,662	138
COST PER DEGREE	13,028	21,287	18,905	145
ALL SEGMENTS				
COST PER STUDENT	1,359	1,749	1,553	114
COST PER DEGREE	17,348	23,282	20,677	119

*Total students and total expenditures are used. Privately borne costs are ignored except as fees, and tuition payments are included in expenditure totals.

**All degrees at or above bachelor level are included.

***The California Consumers Price Index annual average 1957-59 = 100. 1964-66 annual average current dollar deflation factor = 112.6.

Source Enrollment: Same as Table 3.1, See footnote (1).
Expenditures: Same as Table 3.21, see footnote (29).
Price Index: California Consumers Price Index; Annual average 1957-59 = 100. 1964-66 annual average current dollar deflation factor = 112.6.

the figures should be regarded as offering only the most general indications of average operating characteristics. The very fact that such unit costs are of dubious value heightens the importance of efforts to design more useful and comparable measures based upon improved programmatic classifications and revised cost accounting conventions.

33. Table 4.1

Master Plan Projections: Projections for 1972 are extrapolated from the Master Plan projections for 1970 and 1975. The increase from 1970 to 1972 is assumed to be one-half the projected increase from 1970 to 1975.

Actual Enrollment: Same as Table 3.2, see footnote (3).

JCHE Projections: Same as Table 3.2, see footnote (3).

34. The overall assumption of "no change" is subdivided into two sets of more detailed assumptions, one set relating specifically to state educational policy and the other to general trends in society beyond the decision-making sphere of state educational policy. At the state policy level, the most important specific assumptions are the following:

1) No change in entrance requirements;

2) No large increase in charges for California residents;

3) Continuing implementation of the Master Plan's distribution of students; and

4. No change in existing trends in the amount and type of financial aid offered to students.

With respect to those factors not involving the state's educational policy, the major sub-assumptions are:

1) State General Fund revenues increasing in relation to personal income as in the past;

2) Increases in total population and 18-25 age population following past trends;

3) Changes in the college participation rate for each age group following past trends.

4) Federal assistance to higher education continuing on current levels;

5) California personal income and the gross national product increasing at the same rate as in the past; and

6) No drastic escalation or de-escalation of the war in Viet Nam.

The projections do not reflect the results of the new selective service policy under which a large percentage of male graduate students who would have been deferred will now apparently be drafted. There is not yet a clear indication of the new policy's effect on graduate enrollments.

35. All dollar figures in this section reflect anticipated inflation. Where projections were inflated by the Committee, it used the projection of the California Consumer Price Index from the California Development Plan, which indicates that inflation will be about 9 per cent between 1967 and 1972.

36. Table 4.2

State Support, University of California: 1966 and 1967 —Vice President for Business and Finance of the University of California, unpublished report prepared for the Legislative Analyst, October 25, 1967; 1968—1967-68 California State Budget as passed; 1969-72—University of California *Long-Range Fiscal Program.*

State Support, California State Colleges: 1965-66 and 1966-67—Governor's Budgets; 1967-68—California State Budget as passed, 1969 to 1972 operating projections—State College Chancellor's Office, letter to JCHE Research Director of December 18, 1967; 1969 capital outlay projection—above letter from Chancellor's Office with data adjusted for apparent federal contribution; 1970 to 1972 capital outlay projections—JCHE figures based on past state college capital outlay trends.

State Support, California Public Junior Colleges: 1966 and 1967 operating—provided to JCHE by the Bureau of School Apportionments; 1968 to 1972 operating projections—Coordinating Council on Higher Education, Financing California's Public Junior Colleges (1967); 1966 to 1968 capital outlay—Governor's budget; 1969 capital outlay provided to JCHE by the Bureau of Junior College Education; 1970 to 1972 capital outlay —JCHE projections.

General Fund revenues: 1965-66 to 1966-67—Governor's Budget; 1969 to 1972—Joint Legislative Budget Committee, projections prepared in 1964 by H. Kaneda and T. Mayer.

Note—The highest of Kaneda and Mayer's projections was used. The projections have also been inflated using the projections of the California Consumer Price Index made in the California Development Plan.
Total Enrollments: same as Table 3.2, see footnote (3).
Population: Same as Table 3.2, see footnote (3). (Series I Projections.)

Note—July 1, 1966 for fiscal or school year 1966-67.

Age 18-24 Population: Department of Finance, unpublished data.

Index Numbers: Calculated by dividing all numbers in any series by the 1966 number.

37. Chart 4.3

Same as Table 4.2, see footnote (36).

38. Office of the Legislative Analyst, *General Fund Budget Outlook* (November 15, 1967).

39. These latter series appear in Table B.4 in this Appendix. Another measure of the relative changes is state support expressed as a percentage of revenue; this is also shown in Table B.4. The series indicates that 1966-67 and 1967-68 were unusual years, in the former support increases faster than the trend, and in the latter revenues are estimated to increase markedly. However, if these two years are ignored, the series indicates that the ratio has been slowly increasing since 1959-60, and that it will continue to increase until 1971-72.

Table B.4

ACTUAL AND PROJECTED GENERAL FUND REVENUES AND STATE SUPPORT FOR HIGHER EDUCATION, 1958 TO 1972 (current $ millions)

	General Fund Revenues $ millions	State Support for Higher Education $ millions	State Support as % of Revenues	Index Numbers 1958 = 100 General Fund Revenues	Index Numbers 1958 = 100 State Support
Actual Data					
1957-1958	1,111	252	22.7	100	100
1958-1959	1,210	228	18.8	109	91
1959-1960	1 491	227	15.2	134	90
1960-1961	1,598	277	17.3	144	110
1961-1962	1,717	303	17.6	156	120
1962-1963	1,866	354	19.0	168	141
1963-1964	2,137	406	19.0	192	161
1964-1965	2,245	489	21.8	202	194
1965-1966	2,509	542	21.6	226	215
1966-1967	2,620	682	26.0	236	273
Projected Data					
1967-1968	3,532	663	18.8	318	263
1968-1969	3,890	872	22.4	350	346
1969-1970	4,300	1,000	23.2	387	397
1970-1971	4,600	1,093	23.8	414	434
1971-1972	4,900	1,217	24.8	441	483

Source: General Fund Revenues: 1957-58 to 1966-67—Governor's Budget. State support for the University: University of California Vice President for Business and Finance, report prepared for the Legislative Analyst on October 25, 1957. California State Colleges: Governor's Budgets. California Public Junior Colleges: data provided to the JCHE by the Bureau of School Apportionments (1959-60 to 1966-67). Data for 1957-58 and 1958-59 were prepared by the Legislative Analyst.

The projections of General Fund revenue were published by the Joint Legislative Budget Committee in May of 1964. Projections of state support for higher education were taken from the same sources as the projections in Table 4.2, see footnote ([illegible]).

40. Table 44

University of California: 1966 and 1967—University of California, *Statistical Summary of Students and Staff* (annual). 1968 to 1972— University of California, Office of Analytical Studies. Data are averages for the academic year.

California State Colleges: Data are fall term enrollments. 1966 and 1967—Department of Finance, *Report of Total and Full-Time Enrollments in California Institutions of Higher Education;* 1968 to 1972—JCHE projection based on projections of regular students, made by the Department of Finance, and a projection of total enrollment in the state colleges, also made by the Department of Finance. The ratio between total enrollments and the enrollments of regular students was calculated for each class at the state colleges for the past several years. The trends of these ratios were extrapolated and used to calculate total enrollments from the Department of Finance projections for regular students. This procedure was not followed for the projection of graduate student enrollments. The ratio between regular graduate students and total graduate students was quite unstable and no definite trend could be established. The total enrolled graduate students were calculated, using a projection of total enrollments in the state colleges made by the Department of Finance, and the projections of total enrollments of undergraduate students, that had been calculated by the Committee. The ratio of this projection of total graduate student enrollments and the projections of regular graduate students made by the Department of Finance were plausible and of a smooth trend.

California Public Junior Colleges: Graded enrollments in the junior colleges were projected using Department of Finance projections of day, graded enrollments. Graded freshmen were projected on the basis of past ratios between graded freshmen and day-graded freshmen. Similarly, graded sophomores were projected on the basis of past ratios between graded sophomores and day-graded sophomores. Projections of graded students who were neither freshmen nor sophomores were calculated on the basis of the past ratio between these other graded students and total day-graded students.

Private Colleges and Universities: Enrollments in member institutions of the Association of Independent California Colleges and Universities. The projections were made by the Committee on the basis of past enrollment trends. Data for 1966 and 1967 (as well as for prior years) are from the Department of Finance's *Report of Total and Full-Time Enrollments in California Institutions of Higher Education.* The average increase in enrollment over the past ten years has been 5.2 per cent. This increase was assumed to continue for the next five years. The projected total enrollments in the private colleges and universities were divided by class level according to assumed trends in class level distribution as shown in data from the Department of Finance's report of total and full-time enrollments.

41. Table 4.5

University of California: 1965-66 and 1966-67—Vice President for Business and Finance, report prepared for the Legislative Analyst (October 25, 1967); 1967-68 to 1971-72—University of California, *Long Range Fiscal Program* (July 1967).

California State Colleges: 1966 and 1967—Governor's Budgets; 1967-68 to 1971-72, operating, state support —State College Chancellor's Office. Total operating budgets for 1967-68 to 1971-72 were projected by the JCHE by assuming total operating expenditures to be 125 per cent of state support. This has been the approximate ratio for the last ten years. The total operating budget includes funds obtained from reimbursements.

The 1968 state support for capital expenditure is that which is in the budget for 1967-68 as passed by the Legislature. The 1969 state support for capital expenditure is assumed to be that sum listed by the Chancellor's Office less assumed federal share of $7 million. The projections for 1970-72 are trend projections by the Joint Committee. These are intended to include new state college campuses. The projections and estimates of total capital outlay by the Committee reflect inclusion of funds obtained from revenue bonds. These are included because revenue bond funds are part of the expenditures made by the state colleges. In addition, this makes the data comparable to that of the University, which ordinarily includes revenue bond funds as part of its capital outlay program. Capital outlay for 1968-72 is based on an assumed relationship between state support and total capital outlay. The assumed ratio is that total capital outlay equals 165 per cent of state support. This is roughly the ratio suggested by the share of state support indicated in the projections in the budget.

California Public Junior Colleges: 1965-66 and 1966-67 capital outlay—Governor's Budget; 1968-69 capital outlay estimates were provided by Mr. Archie McFerran, Chief of the Bureau of Junior College Administration and Finance; 1969-70 to 1971-72 capital outlay—projections by the JCHE using advice from the Bureau of Junior College Education. 1966-67 operating support —Bureau of School Apportionments; 1967-68 to 1971-72 operating support—Coordinating Council on Higher Education, *Financing California's Public Junior Colleges*, p. 96. Calculations of state, local, and federal support for the junior college operating expenses were made by the JCHE. It was assumed that the state share would increase slowly from 1968 to 1972, reaching 32 per cent in that year, and that federal support would increase slowly from 1968 to 1972, reaching four per cent in 1972. Local support would provide the remainder of the junior college operating expenses.

AICCU Institutions: 1965-66 and 1966-67—actual operating and capital outlay budgets for the AICCU institutions; 1967-68 to 1971-72—JCHE projections based on the past trends of expenditure in AICCU institutions. Data for 1957-58 to 1966-67 indicated that the average annual increase in unit operating costs for the private colleges was eight per cent. This was added to the expected annual enrollment increase and the resulting operating expenditure projections were calculated. The projections for capital expenditures were based on assumed capital unit cost per newly enrolled student in the private colleges. These assumptions have relatively little basis in past history and the projections of capital expenditures are included here mainly by way of illustration.

42. Allan M. Cartter, "Questions of Higher Education in California," speech delivered to the Symposium on Public Policy Issues, the California State Assembly (September 7, 1967).

43. The following exchange was recorded during the Committee's public hearing on tuition (Transcript, Volume 2, p. 118):

> "Senator Grunsky: To what extent has the absence of a tuition charge at the University and state colleges had the effect in recent years of pricing private institutions out of the market for students?"
>
> "Father Donahoe: We don't think we have been priced out of the market for students as a result of no tuition. We feel we are competitive enough to survive with or without tuition. So, we don't think that is an important factor."

See also the prepared response by the AICCU to the same question. (Testimony Submitted to the Joint Committee on Higher Education, October 13 and 16, 1967). It has since been indicated that the AICCU may have been referring only to the imposition of a small tuition charge.

44. Table 5.1
Office of the Legislative Analysi and catalogs of the University of California and the California State Colleges.

45. Table 5.2
University of California: Data submitted to the Regents' Special Committee on Student Charges by the University of California, Office of the Vice President for Business and Finance.

California State Colleges: Data provided by the California State Colleges, Vice Chancellor for Business Affairs.

46. Table 5.3
California State Scholarship and Loan Commission, "Statement of Standard Costs—University of California."

47. Table 5.4
W. Lee Hansen and Burton A. Weisbrod, *Benefits and Costs of Public Higher Education in California*, report prepared for JCHE, 1967, Part 3, pp. 1-6.

48. Table 5.5
Coordinating Council for Higher Education, *Financial Assistance Programs for California College and University Students*, October 11, 1967, Part 4.

49. Table 5.6

50. The Regents' Special Committee on Student Charges commented as follows regarding alternative income sources in its report on tuition, (Agenda Item H, January 11, 1968): "The Special Committee has explored the possibilities for obtaining additional income. There are several areas having real promise, but in all cases they will require time and organization, and in most cases significant new efforts would require modification of Regents' policies."

Apparently the Special Committee believed that no time, organization or modification of Regents' policies would be required to impose tuition.

51. Table 5.7
Compiled from annual financial reports of the University of California and the annual reports of the Treasurer of the Regents of the University of California.

52. Table 5.8
Office of the Auditor General, *A Report on the Financial Practices of The University of California*, 1967, p. 79.

53. Table 5.9
Compiled from annual financial reports of the University of California.

54. Table 5.10
Same as Table 5.2, see footnote (44)—University of California data only.

55. Table 5.11
University of California: Same as Table 5.2, see footnote (44)—University of California data only.

California State Colleges: Annual report to the Coordinating Council for Higher Education of gifts and bequests received by the California State Colleges.

Appendix C

Alternative Measures of Enrollment

There are many ways in which student activity is measured in California. The concepts and terms used in these measures vary considerably among the segments of higher education and with specific budgetary purposes to be served. The following paragraphs list alphabetically the more common measures of student activity currently employed in California higher education.

Attendance, Actual (junior colleges only). The attendance as reported by the instructors of students who are enrolled in and actually attending class. Not included are verified absences of students due to illness or quarantine and for certain professional services.

Attendance, Apportionment (junior colleges only). Actual attendance plus verified absences due to illness or quarantine and for certain professional services.

Attendance, Average Daily (junior colleges only). Average daily attendance (ADA) of pupils enrolled in thirteenth and fourteenth grade courses, exclusive of defined adults, is computed for the first semester by dividing by 30 the sum of the total number of whole and partial class hours of regularly enrolled pupils' attendance recorded during the first and second census weeks. The second semester is computed in an identical manner using the attendance recorded during the third and fourth census weeks. Average daily attendance for both semesters is computed by taking the mean average of the two. For junior colleges on a quarter system average daily attendance for each quarter is computed by dividing by 15 the sum of the whole and partial class hours recorded for the census week of regularly enrolled pupils in grades 13 and 14, exclusive of defined adults. For junior colleges on a four-quarter system the units of average daily attendance reported in the first period report is the quotient computed by diivding the sum of the whole and partial class hours recorded for the first and second quarter by 30.

The attendance for all defined adults, whether they are enrolled in regular classes or classes for adults (non-graded classes), is kept separately from that of all other pupils. Thus the average daily attendance for defined adults in graded courses is computed separately from that for other students in grades 13 and 14. In classes for adults (non-graded classes) each pupil's attendance is recorded in minutes or clock hours, and no absence is charged except when such absence is equal to a full clock hour. Absence due to illness may not be credited for apportionment attendance. The average daily attendance is computed by taking the total clock hours in classes for adults and dividing by 525, regardless of the number of days college was maintained for regular day classes.

Average daily attendance is also kept with respect to the residence of students. A distinction is made between citizens of the United States and citizens of foreign countries, between residents of California and residents of other states, and between those residing within a district maintaining a junior college in California and those residing outside of a district maintaining a junior college but within the state of California.

Credit, Unit of. A unit of academic credit is related to the amount of work accomplished. It may be a quarter credit or quarter hour, semester credit or semester hour, major course unit, or other measurement.

Enrollment, Active. The number of active enrollments as of an established date.

Enrollment, Class Level. The number of enrollments in the different class levels, i.e., freshmen, sophomores, juniors, seniors, and graduates. A freshman is a student who, at the time of registration, has completed fewer than 30 semester units of credit. A sophomore student is one who has completed 30, but less than 60, units of credit. A junior must have completed 60 units but less than 90 units, and a senior 90 or more units.

Enrollment, Classes for Adults (junior colleges only). Enrollment in classes for adults is the same as non-graded enrollments since non-graded classes are the same as classes for adults. The term "adult" is misleading as non-graded classes are not defined with respect to age.

Enrollment, Cumulative. The total number of different individuals who have been registered from the beginning of the fall or spring term.

Enrollment, Day-Graded. The number of students who are reigstered in at least one graded course scheduled to commence prior to 4:30 pm.

Enrollment, Defined Adult (junior colleges only). The number ofenrollments who are 21 years of age or older and who are enrolled in fewer than 10 class hours.

Enrollment, Equivalent Students. Refers to full-time equivalent enrollment.

Enrollment, Full-Time. The number of enrollments in study programs of 12 or more units. The only exception is University graduate students, who are all counted as full-time.

Enrollment, Full-Time Equivalent (FTE) (University and state colleges only). Full-time equivalent enrollment may be in terms of total, regular, limited, full-time or part-time enrollment. FTE is measured at both the student level and the course level at the state colleges. It is measured only by student level at the University. At both institutions FTE is derived by dividing credit hours by 15 (15 credit hours is considered a full study load for all students. It should be remembered that 12 or more units is the definition for full-time *status* as opposed to part-time *status.*) Thus full-time equivalent enrollment is compiled for lower division, upper division and graduate students at the University and state colleges, and for lower division, upper division and graduate *classes* at the state colleges. Since all graduate actual enrollments are considered full-time at the University, the FTE enrollment is obtained by means of a survey. The state colleges also make a distinction with regard to day students. There is 8 to 5 FTE, or the FTE enrollment in classes given between 8 am and 5 pm.

Enrollment, Graded (the distinction applies mainly to junior colleges, as the University and state colleges place non-graded courses in their extension programs). The number of students enrolled in at least one graded course. A student is to be counted in one, and only one, category. A student registered in at least one graded course is to be counted only in this category regardless of the fact that he may be concurrently registered in one or more classes for adults (ungraded classes).

Enrollment, Limited (state colleges only). The number of registered students taking 6 or fewer credit units.

Enrollment, Limited (University only). The number of registered students who do not have a high school diploma.

Enrollment, Non-graded (junior colleges only). The same as enrollment in classes for adults.

Enrollment, Other Student. The number of registered students who are not in one of the class levels (freshman, sophomore, etc.) of a particular institution. Usually these students have a degree but are taking classes which lead to the degree they already have. Their motives for doing this are usually to prepare for advanced study in a field for which they do not have sufficient preparation.

Enrollment, Part-Time. The number of enrollments in study programs of less than 12 credit hours.

Enrollment, Regular (state colleges only). The number of registered students taking more than 6 credit hours.

Enrollment, Special. A somewhat general term. The Bureau of Educational Research uses it in reference to junior college students who are under 21 and enrolled in non-graded courses and "other students" under 21 years of age.

Enrollment, State. The same as cumulative enrollment. This term was used in the junior colleges and state colleges from the early 1930's until the late 1940's.

Enrollment, Total. The number of both full-time and part-time enrollments.

Head Count. A general term usually referring to total enrollment. This term is sometimes used by the University.

Hours, Class (junior colleges only). In grades 13 and 14 of a junior college, one class hour is not less than 50 minutes and not more than 60 minutes. No absence of a pupil enrolled in the day junior college shall be deemed to be absence for apportionment purposes, except when such absence is equal to a full class period.

Hours, Credit. One semester credit hour of work is awarded for (1) a class meeting one hour per week for a semester; or (2) a laboratory meeting two hours per week for a semester; or (3) a laboratory meeting three hours per week for a semester, (4) or combinations of these, depending considerably upon the kind of instruction and material covered in the course.

Hours, Student Contact (junior colleges only). The total number of programmed class periods per week for a student. A whole class period is not less than 50 nor more than 60 minutes. There can be only one whole contact hour per one whole class period regardless of the duration of attendance.

Hours, Total Student Credit. The total number of units of credit of all students actively enrolled.

Appendix D

The Tuition Simulation Model

THE PURPOSES AND GENERAL FORM THE MODEL

The tuition simulation model provides an orderly mechanism for exploring the consequences of hypothetical tuition charges upon the number and distribution of students in California colleges. It also calculates the impacts of these consequences upon state, local and private costs of higher education over a five-year planning period. This appendix describes the model in some detail and outlines the several assumptions which have been made in its design and operation. The text also describes how the model might be adjusted to permit the exploration of a wide range of alternative assumptions about the character of the relationships between price and demand in higher education.

The model has four components.

A. A set of program options the consequences of which are to be explored. These options include the amount of tuition to be charged for various classes of students at various institutions, the uses to be made of tuition revenues, the extent and character of any student aid plan to be offered concurrently with increased tuition, and details of any special programs of high school counseling, precommitment of financial aid, altered entrance requirements, etc.

B. A specification of external circumstances which influence the workings of tuition. Such external circumstances include the tuition rates at private colleges, the amount of living and travel costs associated with college attendance, college participation rates and the sources of financial support for junior colleges.

C. Estimates of system response. Specific estimates are required and made concerning the nature and magnitude of shifts among and out of institutions under hypothetical tuition charges, the relative attractiveness of loans and grants and a basic forecast of entry and persistence rates.

D. Consequences. The model simulates the consequences of program options, given specific external circumstances and given assumed system response characteristics upon the number and distribution of students by segment and level and upon the magnitude and incidence of public and private educational costs.

Figure D. 1 in the appendix provides a schematic characterization of the flow patterns within the model. The computer programs for the tuition simulation model written in FORTRAN II language, are available in the Committee office to permit critics or potential users of the model to gain detailed information on the model's operation and construction. Copies of the Committee's input data and samples of output are also available to supplement the more general documentation provided here.

BASE CASE DATA

The simulation model is grounded on a "base case", which is a projection of enrollment and expenditures in the public and private segments of higher education in California. The base case assumes that no tuition will be imposed in the public institutions of higher education and that information from recent studies of student financial characteristics is reasonably accurate. In addition, it assumes that there will be no important policy changes regarding higher education, and that the "rest of the world" will be much the same as it has been. (These assumptions are described in more detail in footnote 34, Appendix B.)

Projections of the following data were used in the base case:

> Total enrollments (head count) at the four segments of higher education (University of California, California State Colleges, public junior colleges and private institutions), divided by class level;
>
> Family income of the students in each of the four segments, with one distribution for all students in each segment; the distribution is assumed to be constant throughout the period;
>
> Distribution of students by whether they live with their parents or not, with a separate distribution for each segment; the distribution is assumed to be constant throughout the period;
>
> Distribution of students by residence (as defined for tuition purposes), with a separate distribution for each segment; the distribution is assumed to be constant throughout the period; and
>
> Operating and capital unit costs, with projections for each class at each segment for each of the years in the period.

In addition to the foregoing "hard" data, estimates were made of the following relationships:

> The percentage of students at each of the three

public segments having academic eligibility and (in the case of commuters) the geographic feasibility of transferring to another school, with further classification by whether or not the student lived with his parents at his original school and whether he could live with his parents at the new school;

The percentage of students of a given income stratum that would leave their present school given various tuition charges and the percentage of those who leave that would go to another school rather than dropping out completely.

More detailed student characteristics (e.g., different family income distributions for different class levels, or for residents and non-residents) can be incorporated into the model at the cost of the significant increase in size of computer memory that will be required. The sources of the data used in the base case projection are discussed in detail in Appendix E.

BASIC MODEL STRUCTURE

The first step in the simulation model is that of estimating the effects of a particular tuition proposal on the base case (i.e., the change from the projected enrollment levels for each segment of public and private higher education in California).

The effects of tuition are expressed in a student transfer table showing the percentage of students who would transfer to some other segment or change their living pattern as a result of tuition. The student transfer table is applied to the base case enrollment table and a revised enrollment *for that year* is calculated.

It should be noted that, with one exception described in the next item in this outline, there is no consideration of year-to-year effects in the model. In other words, each year's base case enrollment is operated on independently by the tuition transfer table for that year. The effect of this particular aspect of the model's structure is discussed below in this outline.

GRANTS AND LOANS FOR TUITION

The model considers only those grants and loans that are funded specifically out of tuition. Continuing conventional grant and loan programs are some of the factors that determine the base case enrollment, and are therefore assumed to continue as in the past. Additional aid programs not funded out of tuition, additional recruiting efforts in high schools, or additional counseling programs in college are not considered within the model in its present form.

The total amounts of grants and loans that are offered each year in a 5-year period of the model are based on the percentage of total tuition at each segment that is devoted to grants and loans and on the amount of tuition paid at the segment during the previous academic year (or what would have been paid if tuition had been in effect). In other words, the estimate of the total tuition paid (and thus the estimated proportion that would be available for grants and loans) is based on the previous year's enrollment.

The total tuition that is considered available for grants and loans is based on the new tuition that would be charged residents who are attending a particular segment, plus the increased tuition that would be received from non-residents. This calculation, in effect, assumes that the "base case" non-resident tuition continues to be devoted to the purposes for which it would have been used in the base case.

Basing the assumed amount of grants and loans that are available in a given year on the previous year's enrollment tends to understate the total amount of tuition that would be collected in the actual year, because even with tuition imposed, enrollment in each segment tends to increase each year. However, the assumed basis of tuition as the "last year's enrollment" is realistic in that a higher education administrator would very probably have to make commitments for loans and grants prior to the time when he knew exactly how much tuition would be collected.

It has been assumed that only 85 per cent of the funds that are available for loans are in fact accepted by students. This assumption reflects the historical experience that loan offerings have been less fully used than grants.

The model assumes that grants and loans are offered only to people who, in the base case, are attending (or in the case of freshmen who are planning to attend) their present institution. No consideration is given to offering grants and loans that are funded from tuition and collected at a particular segment to entice students from another segment to switch institutions or to encourage attendance at college by those who would not ordinarily attend. This second limitation could be removed by detailed program changes which would, in effect, alter the base case assumptions on entering students.

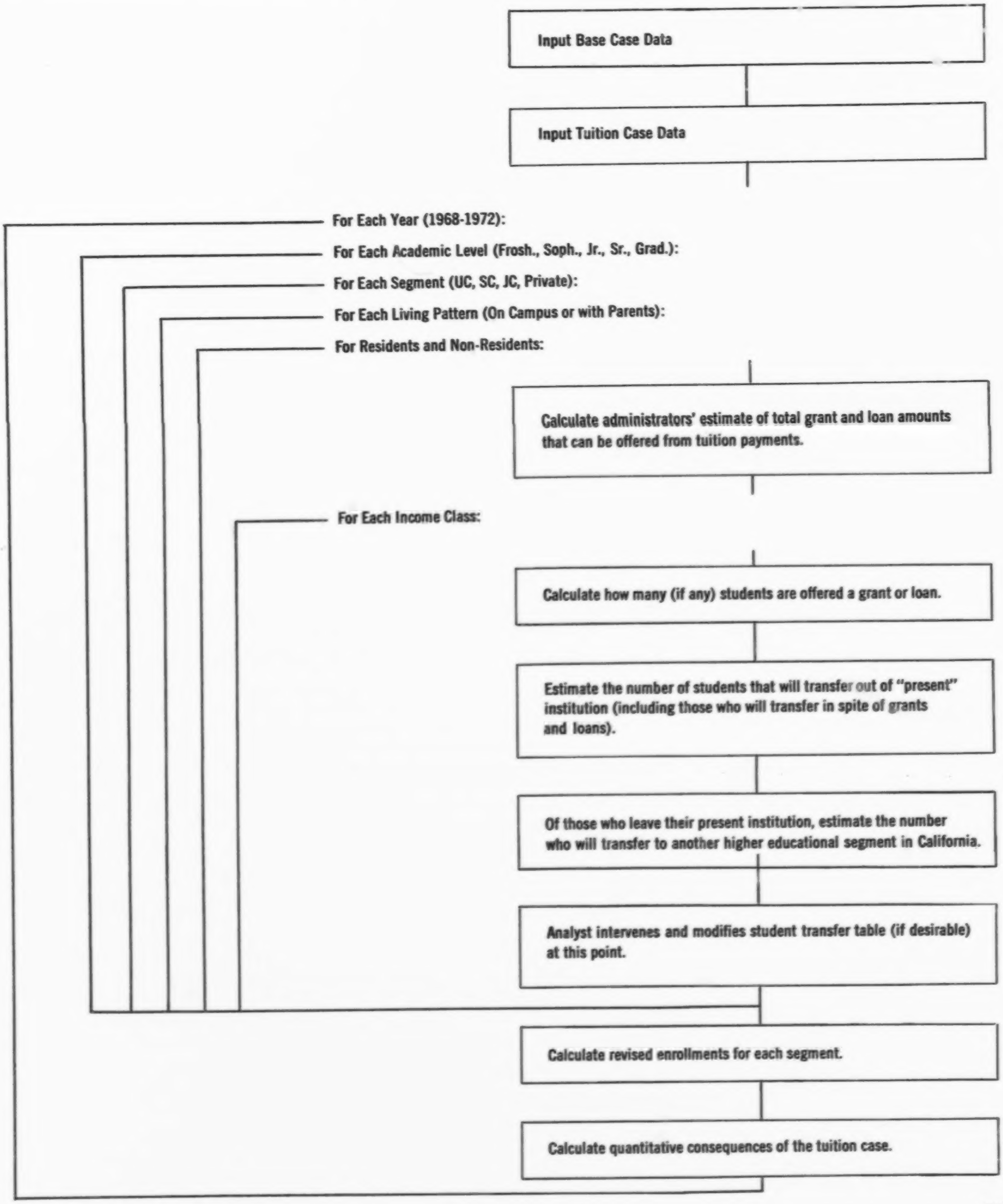
The present structure of the simulation model is such that grants and loans are offered on a first come, first served basis to the sub-classes of students that are processed in the order shown in Figure D.1.

At each segment, grants and loans are first offered to freshmen, then to sophomores and so on. Within each class, grants and loans are first offered to residents who are not living with their parents, then to residents who are living with their parents, and finally to non-residents who are not living with their parents. Within each of these four sub-classes, grants and loans are offered in reverse order of family income, so that students with the lowest incomes are offered the grant or loan first.

If a grant or loan is "accepted", (i.e., if the grant amount is sufficient to induce one or more students in the sub-class being considered to transfer out of his present segment), then the total amount of available grants or loans is reduced by the amounts progressively obligated. Students are first offered grants; when grants have all been utilized, students are then offered loans.

The policy assumption implicit in the present structure of the model is that grants and loans are offered first to freshmen and last to seniors and graduate students. In effect this assumption states that inittial attendance is being encouraged ahead of academic completion. The model could be modified, for example, to reverse the emphasis by offering grants and loans first to seniors. In fact, almost any priority system could be

Figure D.1 **FLOW DIAGRAM FOR TUITION SIMULATION MODEL**


Input Base Case Data
Input Tuition Case Data
For Each Year (1968-1972):
For Each Academic Level (Frosh., Soph., Jr., Sr., Grad.):
For Each Segment (UC, SC, JC, Private):
For Each Living Pattern (On Campus or with Parents):
For Residents and Non-Residents:
Calculate administrators' estimate of total grant and loan amounts that can be offered from tuition payments.
For Each Income Class:
Calculate how many (if any) students are offered a grant or loan.
Estimate the number of students that will transfer out of "present" institution (including those who will transfer in spite of grants and loans).
Of those who leave their present institution, estimate the number who will transfer to another higher educational segment in California.
Analyst intervenes and modifies student transfer table (if desirable) at this point.
Calculate revised enrollments for each segment.
Calculate quantitative consequences of the tuition case.

imposed on combinations of grade level, income, residential status and living pattern.

THE DECISION TO TRANSFER

For each academic level, institutional segment, living pattern and residential status, an estimate is provided of the percentage of students (relative to the base case) who will transfer out of their present institutional segment regardless of whether they transfer to another institution or transfer out of higher education in California. The relative incentive to transfer in response to the imposition of a hypothesized level of tuition can be assumed to be different for each institutional segment and for each academic level. However, a key assumption of the model is that the effect of a particular tuition increase (expressed as a percentage of income) will be the same for all students at a particular segment and a particular academic level. The form of the general relationship between relative numbers who will transfer and increased tuition as a percent of income is shown in Figure D.2. The actual parameters for the step-wise linear curve of Figure D.2 are part of the input data to the model and can be modified to reflect different analysts' assumptions as to student behavior in response to a tuition increase.

In those "tuition cases" where a portion of the tuition is dedicated to grants and loans, a check is made to see if grants or loans are available, or if the supply has been exhausted earlier in the analysis. If either grants or loans are available, students are first offered a grant, then a loan, and an estimate is then made of the number of students in the class being considered who would transfer in response to the tuition increase less the amount of the grant or loan.

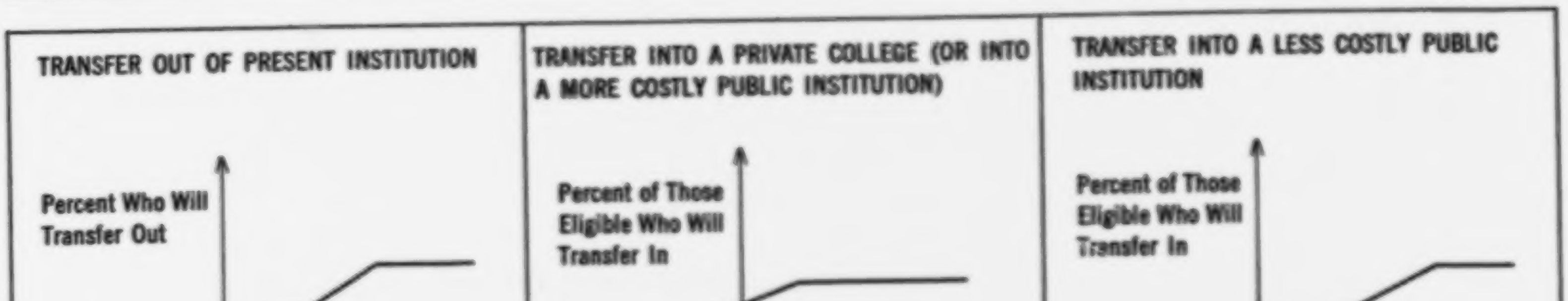
If the tuition case does not involve grants and loans, or if the grant and loan supply has been exhausted, then the "decision to transfer" estimate depends only on the increase in tuition that is being considered. After the percentage of students in each class (i.e., each combination of institutional segment of attendance, living pattern, and residential status) who will transfer has been calculated, the resulting pool of "potential transferees" is allocated in part to the other segments of higher education in California, with the remainder assumed to leave higher education *in California*. The relative propensity to transfer of each class of students is estimated in a manner similar to the estimate of the number who would transfer out of their "present" segment. Figure D.2 shows the assumed characteristic transfer curve affecting the decision as to whether to transfer into a particular segment. The order of attempts to transfer is:

> Remain in the same institutional segment but convert from living on campus to living with parents (applicable only to those students living on campus);
>
> Transfer to private college (living on campus; then, living with parents);
>
> Transfer to a more costly public institution (living on campus; then, living with parents); and
>
> Transfer to a less costly public institution (living on campus; then, living with parents).

It should be noted that the parameters of the particular curves controlling the relative numbers who transfer can be adjusted to change the relative numbers who will go to more and to less costly institutions. However, the present structure of the model is such that students are first exposed to the opportunity to transfer to more costly institutions before they are offered the opportunity to transfer to less costly institutions.

Ability to transfer is affected not only by the cost consideration exemplified by the curves in Figure D.2, but also by an assumed *opportunity* to transfer that is conditioned on both academic ability and geographic feasibility. For example, a transfer from the status of "junior college student living at home" to a "university student living at home", requires both academic eligibility and the geographic proximity of a university near to the home of the student's parents. It is possible to provide different parameters for student transfer characteristic curves, in order to reflect different propensities to transfer of different academic levels.

Figure D.2 **ASSUMED RESPONSES TO TUITION**


TRANSFER OUT OF PRESENT INSTITUTION
Percent Who Will Transfer Out
−
+
Increased Cost At Present Institution (As Percent of Income)
TRANSFER INTO A PRIVATE COLLEGE (OR INTO A MORE COSTLY PUBLIC INSTITUTION)
Percent of Those Eligible Who Will Transfer In
−
+
New Cost At Present Institution Minus Cost At Private College (As Percent of Income)
TRANSFER INTO A LESS COSTLY PUBLIC INSTITUTION
Percent of Those Eligible Who Will Transfer In
−
+
New Cost At Present Institution Minus New Cost At New Institution (As Percent of Income)

Like the curves controlling the decision to leave the "present" segment, the curves controlling transfer into new segments are based on costs as a percentage of income. In this latter case, however, the cost includes with tuition the increased or decreased living costs at the segment to which a transfer is being considered. It should be noted that the result can be algebraicly negative, since the assumption is made that an increase in cost might be tolerated if transfer to a more prestigious institution were being considered. After all possible transfers have been considered, any students remaining in the pool of individuals who were estimated to transfer out of their present segment are relegated to the category "transfer out of higher education in California."

THE REVISED ENROLLMENT ESTIMATE

The five-year enrollment projection contained in the base case is revised by a matrix multiplication of the base case enrollment table times the estimated "student transfer table". That is, the revised percentage of students in each combined class of institutional segment of attendance, living pattern, residential status and academic grade level is multiplied by the original enrollment at that segment in order to calculate the new enrollment at each segment. It is at this point that the output of the model is affected by the fact that no inter-year transfer effects are considered. For example, the calculation of the revised enrollment at the sophomore level at a particular segment involves a multiplication of assumed percentages who transfer that particular year. There is no consideration of the fact that the absolute number of sophomores in the base case (the number that is reduced by those who transfer out in response to tuition) may be artificially high since in the previous year freshmen may have transferred out in response to tuition. The model could be modified to consider this year-to-year effect, given estimates of the relative percentages of any academic level who were continuing from the previous year at the same academic level, transferring from another segment or matriculating from a lower academic level the previous year.

The model has provision to convert the units of enrollment at one segment to a different set of units at another segment. For example, if enrollment at one segment is measured as full-time equivalent (FTE) enrollment and if, at another segment to which certain numbers of students are estimated to transfer, the enrollment is expressed as total enrollment, then a multiplier can be introduced to convert estimated FTE enrollment at one segment to estimated total enrollment at the other. This capability is not now in use since total enrollment (total 13th and 14th grade enrollment in the junior colleges) is the unit used for each segment. The relative proportions of part-time and full-time students are accounted for in the calculation of unit costs.

THE ESTIMATES OF EXPENDITURES OF THE INSTITUTIONAL SEGMENTS

For each year of the planning period, the calculation of operating costs of each segment is based on the multiplication of an assumed unit cost per student times the number of students (where this number of students has been revised in response to the effects of tuition). The model permits using different unit costs for each institutional segment, for each academic level and for each year.

Operating unit costs are the expenditures per enrolled student. The level of these unit costs is lower than unit costs per FTE or per ADA because of the enrollment of part-time students. It is assumed that transfer among the several segments will not change the mix of full-time and part-time students.

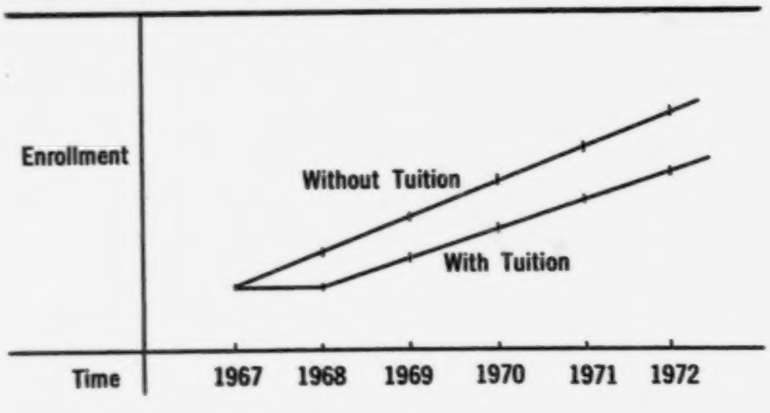
Capital expenditures are estimated in the same way as operating expenditures except that the unit costs are multiplied by the *increase* in enrollment from the previous year. If enrollment should decrease from one year to the next, then the capital cost would be zero.

Unit costs were calculated from the projected enrollments and expenditures of the segments. Occasionally the resulting series fluctuated widely since enrollments and costs did not change at the same rate (this was especially true of capital unit costs), resulting in unrealistic expenditures after transfers had changed the enrollments. To make the model output a better estimation of the actual situation, the unit cost series were adjusted to make a reasonably smooth base case curve.

In order to reflect the fact that the capital expenditure necessary to accommodate some years' student increase is in fact an investment in facilities usable for years to come, the total capital costs at public institutions are converted into an annual capital charge on the assumption of straight-line depreciation and a 25-year useful building life.

It should be noted that the decrease in capital expenditures for the first year of the planning period (i.e., 1967-68) is normally quite large. This large decrease is caused by the fact that, in the first year, the increase in enrollment after the effects of tuition have been calculated is a function both of the tuition case and of enrollment in the base case for the last year at which no tuition was imposed. Accordingly, as shown in Chart D.3, the curve of enrollment as a function of time starts out at the same point for both the base case and the "enrollment after tuition" case, so that at the first year the increase in enrollment for the latter case is markedly lessened. In succeeding years the "enrollment after tuition" remains less than the base case, but the year-to-year increase is more nearly proportional to the absolute enrollment.

Chart D.3 **COMPARISON OF ENROLLMENT TRENDS WITH AND WITHOUT TUITION**



Appendix E

Projections of Enrollment and Expenditures for The University of California, California State Colleges, Junior Colleges and AICCU Institutions

UNIVERSITY OF CALIFORNIA

University of California enrollments are expected to increase from 78,043 in 1966 to 111,196 in 1972. This increase will be concentrated in the graduate division, and, to a lesser extent, in the upper division. During this same period, the total expenditures are expected to rise from $544 million to $1,058 million. If past trends are followed, 22,580 degrees will be granted in 1972 compared to 16,267 in 1966.

The University has made projections and plans in some detail for most of its activities. Enrollments, of course, are projected a number of years into the future; the University has also prepared a detailed Long Range Fiscal Program (LRFP that sets out budgets for the next ten years. These data are more than projections, since they reflect decisions and proposals about future development as well as the effects of trends. However, these decisions are based upon the projections of future enrollments. The fiscal program states: "The only important exceptions to the rule that resources are derived from projected students are Agricultural Research and Extension and non-state support of organized research".* So, precisely put, the data in the LRFP show what the University would like to do given the projected enrollments.

The enrollment projections appear in Table E.1 expressed both as total enrollment and as full-time equivalents (FTE). The increasing relative share of the graduate division is quite marked; the ratio of lower to upper to graduate FTE changes from 34:34:32 to 28:35:37.

The lower-upper division ratio at the University was 50:50 in 1966, and the University expects it to be about 45:55 by 1972. This ratio approaches that of 40:60 recommended in the Master Plan.

The impact of the projected increase in the relative size of the graduate division is sharply reflected in the budgets, since graduate students are more expensive to instruct than undergraduates under current accounting conventions and current practice. Unit operating costs for graduate students in 1966-1967 are estimated to be about 2.7 times those for lower division students, and capital costs per new graduate student are about 4.3 times capital costs per new lower division student, as shown in Table E.2. It is therefore consistent to expect University budgets to increase markedly over the next five years, as Table E.3 shows. The University's operating expenditures are expected to rise to $881 million by 1972, while capital expenditures rise to $175 million. The total University expenditure will increase to 194 per cent of the 1966 sum. By comparison, the increase in enrollment by 1972 will reach only 142 per cent of the 1966 total.

The revenue sources for these expected expenditures are described in Table E.4. The operating support expected from the state increases to 192 per cent of the support level in 1966, while federal support increases to 224 per cent. The relative state share of total operating support will decrease from 49 per cent to 45 per cent, while the federal share will grow slightly, from 25 per cent to 27 per cent. The shares contributed by other operating fund sources are expected to remain roughly constant, except for hospital income, which nearly doubles. The proportionate shares of capital outlay contributed by the several sources vary widely from year to year, and no strong trend is evident.

There has been a great deal of recent interest concerning the costs and the role of the University's medical schools, especially the new schools at San Diego and Davis. Data in the LRFP indicate that support for medicine will continue to form a large portion of the total budget. Expenditures on the medical campuses are compared with costs on all other campuses in Table E.5.

Throughout the period 1966 to 1972, operating support for the medical campuses will take 20-25 percent of the operating budget, and capital support will require about 20 per cent of the University's total capital budget. The 1965-1966 FTE on the medical campuses was 4629, resulting in an average operating expenditure of $17,880 per FTE. The effect of the medical campus budget also may be seen by comparing the average operating expenditures per student with the medical campuses first included and then excluded. With the medical campuses included, the average operating cost

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*The version presented to the Regents in July, 1967, p. 2.

Table E.1

ACTUAL AND PROJECTED TOTAL AND FULL-TIME EQUIVALENT ENROLLMENTS, UNIVERSITY OF CALIFORNIA, 1966 TO 1972

TOTAL ENROLLED STUDENTS — ANNUAL AVERAGE

ACADEMIC YEAR	LOWER DIVISION	LOWER % OF TOTAL	UPPER DIVISION	UPPER % OF TOTAL	GRADUATE DIVISION	GRADUATE % OF TOTAL	
1965-1966	26,276	33.7	26,905	34.5	24,862	31.8	78,043
1966-1967	27,050	32.1	30,445	36.1	26,882	31.9	84,377
1967-1968	27,973	30.9	33,028	36.4	29,528	32.6	90,529
1968-1969	28,499	29.8	35,088	36.6	32,171	33.6	95,758
1969-1970	29,853	29.4	36,526	35.9	35,451	34.8	101,830
1970-1071	30,387	28.4	37,970	35.6	38,414	36.0	106,771
1971-1972	30,477	27.4	39,133	35.2	41,586	37.4	111,196

ANNUAL FTE — MEASURED BY DIVISION IN WHICH STUDENTS ARE REGISTERED(a)

ACADEMIC YEAR	LOWER DIVISION	LOWER % OF TOTAL	UPPER DIVISION	UPPER % OF TOTAL	GRADUATE DIVISION	GRADUATE % OF TOTAL	
1965-1966	25,077	34.0	25,041	34.0	23,559	32.0	73,677
1966-1967	26,693	33.0	28,248	34.9	25,836	32.1	80,777
1967-1968	28,161	31.2	31,535	34.9	27,129	33.9	86,823
1968-1969	27,695	30.7	32,624	36.2	29,792	32.2	90,111
1969-1970	28,468	29.8	33,894	35.5	32,795	34.7	95,157
1970-1971	29,006	29.1	35,238	35.3	35,526	35.6	99,771
1971-1972	29,111	28.0	36,322	35.0	38,422	37.0	103,855

(a) The University measures FTE by counting the course units taken by students registered in each of the three divisions. This is in contrast to the method of the state colleges, which count the course units taken in the courses offered by each of the three divisions, no matter what division the students are registered in. See the discussion in Appendix C.

Source: Enrolled students: 1965-66 and 1966-67—University of California, *Statistical Summary* (1965-66 and 1966-67); 1967-68 to 1971-72—University of California, Office of Analytical Studies (unpublished data).
Annual FTE: Office of Analytical Studies (unpublished data).

per FTE is $5,775 for 1966 and $8,486 for 1972. With medical campuses excluded, the figures drop to $4,963 for 1966 and $6,887 for 1972.

One point worth noting is that a large proportion of the support for the medical campuses comes from non-state sources. The total capital outlay for the period 1966 to 1972 is supported almost entirely by equal federal and state contributions. The breakdown of operating revenue by source for the San Francisco Medical Center may be used as a proxy for all the medical schools. In 1965-1966, 37.8 per cent of its funds were from the state, 27.9 per cent from the federal government, and 21.8 per cent from hospital and clinic fees. This leaves only 12.5 per cent "other". (*)

Table E.2

UNIVERSITY UNIT COSTS OF INSTRUCTION, 1966-1967

	CAPITAL (per additional student)	OPERATING (per enrolled student)
Lower Division	$ 5,200	$ 850
Upper Division	$ 8,100	$1,450
Graduate Division	$22,500	$2,400

Source: Developed by the Committee from data in a letter from F. E. Balderston, Vice President for Business and Finance, University of California, dated November 1968, to the chairman of the Joint Committee.

The physical expansion of the University has been striking in the past several years, with the addition of two new medical schools as well as three new general campuses. The increased enrollment expected in the next five years will be housed on presently existing campuses, with the Berkeley and Los Angeles campuses reaching their programmed capacity during the period. However, two new general campuses are being planned, one in the north and the other in southern California. The LRFP indicates that operating funds will be spent on preliminary planning for both new campuses by 1972. No capital funds are yet budgeted for these new campuses.

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*The Auditor General's report to the JCHE on the Financial Practices of the University of California.

One important activity at the University has been excluded from the preceding discussion: work performed at the various laboratories supported by the Atomic Energy Commission. These contracts are quite sizeable, running between $225 million and $246 million during 1962-67. There is no reason to expect that the funds spent here will not continue to be as sizeable as they have been in the past. The AEC contracts were excluded from the University budgets on the grounds that they were not a part of the "normal" functioning of the University, since they did not respond to enrollments and were traditionally outside of the range of the state's educational policy. Projections of the level of activity under the AEC contracts cannot be made since the funds appropriated respond to managerial decision rather than demographic trends. Although the AEC funds have effects on the University and on the state, the Committee is not prepared to discuss in this report whether these effects are advantageous or not, but postpones consideration to a later date.

In summary, the University indicates that by 1971-1972 its enrollments will be 42 per cent larger than in 1965-1966, and that its expenditures will have nearly doubled over the period. A large share of these expenditures will support medical schools. One reason for the greater increase in expenditures than in enrollments (other than inflation) is that relatively more of the University's students will be graduate students, and they are more expensive to educate. More details about the unit costs at the University and information about the exact uses proposed for University funds will be developed by the Committee in the course of its studies.

CALIFORNIA STATE COLLEGES

Only a limited number of projections are available for the state colleges for the next five years. Not only is there a need for program budgeting for the state colleges, but there is a need for more tangible evidence of planning. The only recent enrollment projections made by the state colleges are of total FTE's, with no projections for the upper, lower and graduate divisions. The only available projections showing enrollments in each division are those produced by the Department of Finance, which have not been adjusted by the Chancellor's Office to reflect anticipated changes in enrollment caused by new policies. The only budgetary projections available from the state colleges are for state contributions, and the Committee has no way to project total expenditures other than assuming the total to be some multiple of the state contribution.

The available enrollment projections are shown in Table E.6. Total enrollments in 1972 will be 150 per cent of the 1966 enrollments, with proportionately more of this increase occurring in the upper division, which will increase from 46 per cent to 50 per cent of the enrolled students, according to the Department of Finance projections. The lower division will decrease from 31 per cent to 27 per cent. The graduate division will stay at about 23.5 per cent of the total enrollment. In the past, the distribution of full-time students by class level has been quite different from the distribution of total enrollments, since relatively more graduate students attend part-time. The Committee has no information as to whether this trend will continue, but makes the assumption that it probably will.

Budget projections indicate a large expected increase in expenditures for the state colleges. The projection for state support, shown in Table E.7, forecasts that 1972 support will be 330 per cent greater than that for 1966. This increase is especially striking when compared to the enrollment increase of "only" 150 per cent.

Three sets of projections of state support for capital outlay are given, one from the Chancellor's Office, one from the 1967-1968 Governor's Budget, and a third projected by the Committee. The first two decline precipitously after a few years and, with continuing increases in enrollment, would seem to contradict reality. The explanation may be that the first two projections do not include new state college campuses, four of which are currently planned, and that the activity necessary to refurbish the existing campuses will taper off over time. The enrollment projections, however, do include those students who will be housed at new campuses, and it appears that the operating cost projections include these students also. The Committee believes that its own projection, which is merely a continuation of the past trend of capital expenditure, gives a more accurate indication of what the total capital outlay support for the state colleges will be, given a continuation of the *status quo*.

Table E.7 also shows the Committee's estimate of total

Table E.3 **ACTUAL AND PROJECTED OPERATING AND CAPITAL EXPENDITURES, UNIVERSITY OF CALIFORNIA, 1966 TO 1972 (Current $000,000)**

BUDGETS	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972
Operating	425.4	508.9	556.6	643.6	715.8	782.1	881.5
Capital	118.6	100.4	113.1	166.1	199.2	216.2	176.2
Total	544.0	609.3	669.7	809.7	915.0	998.3	1057.7
Index numbers for total (1966 = 100)	100	102	123	149	168	184	194

Source: University of California, **Long Range Fiscal Plan** (July, 1967). Data were inflated by the Committee using the projections of the California Consumer Price Index from the California Development Plan.

Table E.4 ACTUAL AND PROJECTED REVENUE SOURCES FOR EXPENDITURES, UNIVERSITY OF CALIFORNIA, 1966 TO 1972 (Current $000)

A. OPERATING EXPENDITURES

REVENUE SOURCES	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972
State	207,915	243,232	250,665	316,129	338,940	363,225	398,753
%	48.9	47.8	45.1	49.1	47.3	46.3	45.3
Federal	106,170	132,375	134,125	157,329	188,877	212,398	237,166
%	25.0	26.0	24.1	24.5	26.4	27.2	26.9
Fees	35,017	41,256	46,427	53,517	60,251	65,652	71,411
%	08.2	08.1	08.3	08.3	08.4	08.4	08.1
Gifts and Endowments	20,471	24,084	24,817	26,622	28,653	31,703	34,035
%	04.8	04.7	04.5	04.1	04.0	04.1	03.9
Hospitals	18,589	29,780	32,893	39,073	42,600	46,386	71,723
%	04.4	05.9	05.9	06.1	06.0	06.0	08.1
Auxiliary Enterprises	22,216	25,161	26,850	28,968	32,330	34,473	37,318
%	05.2	04.9	04.8	04.5	04.5	04.4	04.2
Other	15,016	12,892	40,803	21,969	24,142	28,232	31,073
%	03.5	02.6	07.3	03.4	03.4	03.6	03.5
Total	425,394	508,870	556,580	643,607	715,793	782,069	881,479
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0

B. CAPITAL OUTLAY EXPENDITURES

REVENUE SOURCES	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972
State(a)	57,614	65,867	56,821	78,373	110,609	100,488	103,010
%	48.8	65.1	50.3	47.2	55.5	46.5	58.2
Federal	37,960	19,683	20,589	49,237	35,992	46,551	25,587
%	32.2	19.5	18.2	29.6	18.1	21.5	14.5
Loans	22,450	15,536	34,655	36,822	50,733	59,601	38,491
%	19.0	15.4	30.6	22.2	25.5	27.3	21.8
Fees and Gifts	0	33	1,009	1,699	1,871	10,065	9,774
%	0.0	0.0	0.9	1.0	0.9	4.7	5.5
Total	118,024	101,119	113,074	166,131	199,205	216,705	176,862
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) State Capital support and total capital outlay for 1966 and 1967 do not agree with Table 4.5 because of apparent accounting differences in the two source documents. See the discussion in Appendix E.
Source: Same as Table E.3.

Table E.5 **COMPARISON OF ACTUAL AND PROJECTED COSTS FOR MEDICAL CAMPUSES AND ALL OTHER CAMPUSES, UNIVERSITY OF CALIFORNIA, 1966 TO 1972 (Current dollars)**

COSTS AND FTE ENROLLMENTS	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972
Operating ($000)							
Medical	$82,789	$104,431	$118,631	$139,899	$156,122	$172,946	$220,097
%	19.5	20.5	21.3	21.7	21.8	22.1	25.0
All Other	342,605	404,439	437,949	503,707	559,671	609,124	661,383
%	80.5	79.5	78.7	78.3	78.2	77.9	75.0
Total	425,394	508,870	556,580	643,606	715,793	782,070	881,480
Capital ($000)							
Medical	$25,178	$8,393	$18,204	$36,969	$39,889	$43,327	$41,672
%	21.3	8.3	16.1	22.2	20.0	20.0	23.5
All Other	92,846	92,726	94,869	129,163	159,328	172,838	135,190
%	78.7	91.7	83.9	77.8	80.0	80.0	76.5
Total	118,024	101,119	113,073	166,132	199,208	216,165	176,862
FTE on Medical Campuses	$4,629	$5,108	$5,647	$6,158	$6,658	$7,208	$7,838
All Other FTE	69,034	75,669	81,188	83,951	88,809	92,560	96,037
Total FTE	73,663	80,777	86,836	90,109	95,467	99,768	103,875
Medical Operating ÷ Medical FTE	$17,880	$20,440	$21,000	$22,720	$23,440	$23,990	$28,080
All Other Operating ÷ All Other FTE	4,963	5,344	5,043	6,000	6,302	6,581	6,887
Total Operating = Total FTE	5,775	6,300	6,409	7,142	7,498	7,839	8,486

Sources: Expenditure data are from the **Long Range Fiscal Plan** (July, 1967) and were inflated by the Committee. FTE's are from the Office of Analytical Studies and the 1967-68 Governor's Budget.

Table E.6 ACTUAL AND PROJECTED TOTAL AND FTE ENROLLMENTS, CALIFORNIA STATE COLLEGES, 1966 TO 1972

ENROLLMENTS AND LEVELS	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972
Total Enrollment							
Freshmen	28,060	26,400	27,400	28,400	29,980	31,800	33,700
%	18.1	15.6	14.9	14.4	14.3	14.5	14.4
Sophomores	20,033	22,250	22,850	24,250	25,570	27,150	28,900
%	12.9	13.1	12.4	12.3	12.2	12.3	12.4
Lower Division	48,093	48,650	50,250	52,650	55,550	58,950	62,600
%	31.0	28.7	27.3	26.8	26.6	26.8	26.8
Juniors	36,542	44,098	47,800	50,400	53,750	56,700	59,500
%	23.6	26.0	26.0	25.6	25.7	25.6	25.5
Seniors	34,103	37,208	43,600	47,600	50,500	53,700	56,400
%	22.0	22.0	23.7	24.2	24.1	24.3	24.2
Upper Division	70,645	81,306	91,400	98,000	104,250	110,400	115,900
%	45.6	48.0	49.7	49.8	49.8	49.9	49.7
Graduate	36,189	39,564	42,350	46,050	49,400	51,580	54,900
%	23.4	23.3	23.0	23.5	23.7	23.3	23.5
Total	154,927	169,520	184,000	196,700	209,200	220,930	233,400
%	100.0	100.0	100.0	100.0	100.0	100.0	100.0
FTE (Total)	116,689	129,080	144,120	156,940	167,170	179,840	192,210
8 - 5 FTE(a)	104,890	111,177	120,004	129,982	138,806	147,599	156,536

(a) The full-time equivalent enrollment in courses given between 8:00 am and 5:00 pm, used in capital planning.

Source: 1965-66 and 1966-67—Department of Finance, **Report of Total and Full-Time Enrollments in California Institutions of Higher Education** (1966 and 1967); 1967-68 to 1971-72—unpublished Department of Finance projections of "regular students" converted to total enrollments by the Committee.

operating and capital costs for the state colleges. Total operating expenditures are assumed to be 125 per cent of state support, and total capital outlay is assumed to be 165 per cent of state support. The ratio for operating funds is the historical ratio between state support and total operating income (including reimbursements), while the ratio for capital outlay was assumed on the basis of the data in the 1967-1968 Governor's Capital Outlay Budget.

The lack of connective tissue, that is, of plans, budgets and explicit assumptions to link the expected enrollment increases to the much larger relative levels of expected state support, is disturbing to the Committee. Without documentation of the general sort provided by the University's long range financial plans, it is difficut to know how the Trustees are able to understand, let alone approve the level and mix of programs which much generate the estimates of associated state support. It is clear that the Legislature is unable to make any evaluation of the merits of the proposed programs in relation to their expected costs without at least some programmatic and financial detail to link what is to be done with what is to be expended. The Committee expects to make continuing efforts to comprehend the bases of these projections in 1968.

Table E.7 **ACTUAL AND PROJECTED EXPENDITURES, CALIFORNIA STATE COLLEGES, 1965-1966 TO 1971-1972 (Current $000)**

	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972
Operating(a)							
State Support	138,746	178,562	191,249	257,000	318,000	364,000	420,000
Total(b)	172,887	219,929	239,000	322,000	398,000	455,000	525,000
Capital—Governor's Budget Projection							
State	29,906	120,438	75,630	102,895	86,293	62,527	29,027
"Non-State"	37	51,505	41,844	48,858	21,902	44,978	4,300
Federal	0	1,000	17,297	7,000	7,000	7,000	7,000
Total	29,943	172,943	134,771	158,753	115,195	114,505	40,327
Capital—CSC Chancellor's Office Projection							
Total(d)	29,943	66,510	61,684	108,381	92,518	81,562	38,628
Capital—JCHE Projections							
State	29,906	120,438	61,684	101,381	101,300	117,600	132,000
Total(e)	29,943	172,943	101,500	167,279	167,000	198,000	218,000
Totals, operating and capital outlay(f)							
State	168,652	299,000	252,933	358,381	419,300	481,600	552,000
Total Budget	202,830	392,872	340,500	489,279	565,000	653,000	743,000

(a) Reimbursements included in total.

(b) Total = 125% of state support for 1967-68 to 1971-72.

(d) Probably is state and federal, excluding revenue bonds.

(e) Includes revenue bonds and new capuses. For 1967-68 to 1971-72, total = 165% of state support.

(f) Uses JCHE projections of capital outlay.

Sources: Operating: 1965-66 and 1966-67—The 1967-68 Governor's Budget; 1967-68—FY 1968 budget as passed; 1969-70 to 1971-72—letter from William Allison, Administrative Assistant to the Vice Chancellor for Business Affairs, California State Colleges, December, 1967. Capital: Governor's Budget Projection: 1967-68 Budget. CSC: Allison letter. JCHE: 1965-66 and 1966-67—Governor's Budget; 1967-68—budget as passed; 1969-70 to 1971-72—JCHE trend projection.

CALIFORNIA'S PUBLIC JUNIOR COLLEGES

The projections for the junior colleges reflect a continuation of their past role. They will continue to enroll large numbers of students, and the ratio of sophomore to freshmen will remain quite low.

Table E.8 shows the enrollment projections for the junior colleges. Unfortunately, it is not possible to obtain data on average daily attendance (ADA) by class level, and so the only projection that separates the students by class is that for total enrollments. In the past, full-time freshmen have been about 40 per cent of total freshmen, and full-time sophomores about 45 per cent of total sophomores, and this past ratio may be kept in mind when perusing these total enrollment projections.

The enrollment projections for 1972 are generally about one-and-one-half times the enrollments for 1966, with some minor variations; the total will reach 745,100. The ratio of freshmen to sophomores will remain at about three to one.

Table E.8 [redacted] **ACTUAL AND PROJECTED ENROLLMENTS, JUNIOR COLLEGES, 1966 TO 1972**

ENROLLMENTS AND LEVELS	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972
Graded Enrollments							
Freshmen	331,004	345,734	380,000	425,000	448,000	492,000	540,000
%	72.1	70.9	71.9	72.5	72.4	72.6	72.5
Sophomores	101,640	112,363	117,500	127,000	134,000	145,000	161,000
%	22.1	23.1	22.2	21.7	21.6	21.4	21.6
Other	26,756	29,361	31,200	33,900	37,100	40,600	44,100
%	5.8	6.0	5.9	5.8	6.0	6.0	5.9
Total	459,400	487,458	528,700	585,900	619,100	677,600	745,100
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Nongraded	83,825	67,760	78,300	87,100	92,900	101,400	110,900
Total Enrollment	543,225	555,218	607,000	673,000	712,000	779,000	856,000
% Graded	84.6	87.8	87.1	87.	87.0	87.0	87.0
% Nongraded	15.4	12.2	12.9	12.9	13.0	13.0	13.0
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Day-Graded Enrollments							
Freshmen	193,466	197,215	217,417	243,187	256,068	281,043	304,674
%	74.8	72.8	73.2	73.3	72.5	72.4	72.4
Sophomores	59,574	67,922	72,343	79,666	86,043	94,511	102,259
%	23.0	25.1	24.3	24.0	24.4	24.3	23.3
Other	5,478	5,661	7,245	9,000	10,926	12,087	13,887
%	2.2	2.1	2.5	2.7	3.1	3.3	3.3
Total	258,518	270,798	297,005	331,853	353,037	387,641	420,820
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average Daily Attendance	321,787	341,981	392,300	413,700	428,900	446,200	466,900

Sources: Graded Enrollments: 1965-66 and 1966-67—Department of Finance, *Report of Total and Full-Time Enrollments in California Institutions of Higher Learning* (1966 and 1967); 1967-68 to 1971-72—Projected by the JCHE on the basis of Department of Finance projections of day-graded enrollments.

Non-graded Enrollments: 1965-66 and 1966-67—unpublished Department of Finance data; 1967-68 to 1971-72—projected by the JCHE on the basis of Department of Finance total enrollment projections and JCHE graded enrollment projections.

Total Enrollment: Department of Finance data.

Day-graded Enrollments: Department of Finance, except that 1971-72 extrapolated by the JCHE.

Average Daily Attendance: Department of Finance, published in the Coordinating Council on Higher Education's *Financing California's Public Junior Colleges.*

The financial projections appear in Table E.9. Capital outlay will reach about $65 million per year, with the state and the local districts splitting the total costs remaining after the federal aid is deducted. This split in capital fund sources will not hold for all years; in fact, the known capital outlay requests for 1968-1969 indicate that the state share will be larger than the local share, since many relatively poor or new districts are taking advantage of the recent legislation providing for additional state support for such districts.

Total expenditures will be about $443 million as compared with $237 million in 1965-1966; this is an increase of about 187 per cent over 1965-1966. The role forecast for the junior colleges shows little change from the past.

Table E.9 **ACTUAL AND PROJECTED EXPENDITURES, JUNIOR COLLEGES, 1966 TO 1972 (Current $000)**

	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972
CAPITAL OUTLAY							
Local	$ 25,794	$ 8,867	$ 17,023	$ 19,586	$ 26,500	$ 29,000	$ 29,000
%	43.3	37.3	39.0	37.9	44.2	44.6	44.6
State	25,890	7,956	19,617	25,133	26,500	29,000	29,000
%	43.5	33.5	45.0	48.6	44.2	44.6	44.6
Federal	7,827	6,953	7,000	7,000	7,000	7,000	7,000
%	13.2	29.2	16.0	13.5	11.6	10.8	10.8
Total Capital	$ 59,511	$ 23,776	$ 43,640	$ 51,719	$ 60,000	$ 65,000	$ 65,000
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0
OPERATING SUPPORT							
Local	$176,386	$192,661	$214,550	$231,687	$244,350	$262,350	$291,380
%	75.3	71.4	70.0	68.75	67.5	66.25	64.0
State	56,219	70,280	82,755	94,360	104,980	118,800	133,900
%	23.0	26.0	27.0	28.0	29.0	30.0	32.0
Federal	4,124	7,099	9,195	10,953	12,670	14,850	17,720
%	1.7	2.6	3.0	3.25	3.5	2.75	4.0
Total	$236,729	$270,040	$306,500	$337,000	$362,000	$396,000	$443,000

Sources: Capital Outlay: 1965-66 to 1967-68—1967-68 Governor's Budget; 1968-69—estimated by Archie McPherran, Junior College Bureau, Department of Education; 1969-70 to 1971-72—projected by the JCHE using the advice of the Junior College Bureau. Operating Support: 1965-66 and 1966-67—Department of Education unpublished data; 1967-68 to 1971-72—total operating—Coordinating Council on Higher Education, *Financing California's Public Junior Colleges*, 1. 96, Federal, state and local support assumed by the JCHE.

CALIFORNIA'S PRIVATE COLLEGES AND UNIVERSITIES

Projections for the private institutions of higher learning in California have been made by the Committee without detailed knowledge of institutional plans for the future, and so are mainly attempts to follow past trends. The projections are limited to those schools which are members of the Association of Independent California Colleges and Universities which provided the historical data on which the projections were made.

The enrollment projections assume that the yearly growth in total enrollments will be equal to the average annual increase of the past ten years, 5.6 per cent. The AICCU informed the Committee that the schools expect a growth rate of about 5 per cent each year, and thus the Committee's assumption appears realistic. The separation of the projected enrollments by class level is based on an assumed distribution developed from the past distribution of students. These projections appear in Table E.10, and show an increase in total enrollments from 80,107 in 1966 to 109,552 in 1972.

The financial projections, also in Table E.10 were similarly grounded on assumed ratios, and are useful only as illustrations of what might happen. A striking increase in operating expenditures is projected on the basis of past increases in average operating cost as related to enrollments; this figure reaches 230 per cent of the 1966 expenditures by 1972.

Projection of capital outlay is difficult, since in the past the sums spent have varied widely from year to year. The projection indicates an increase in capital outlay to $115 million by 1972, which does not seem unreasonable.

Most of the increase in enrollments in the AICCU institutions will be housed through expansion of existing campuses. Few plans for additional campuses have been announced. A second campus will be built by U. S. International University (formerly California Western); Immaculate Heart College will move to near the Claremont Colleges, and may grow faster on its new campus. It appears reasonable to expect another Claremont College within the next five years, since the plan for the group indicates that a new school should be added every eight years and the most recent addition was in 1963. With these exceptions, the private colleges will grow on their existing sites, as far as the Committee presently knows. Thus, as far as can be determined from available data, the private institutions will continue to form an important part of California's system of higher education, and do so with the minimal state support afforded by tax exemptions and state scholarships.

Table E.10 **ACTUAL AND PROJECTED ENROLLMENTS AND EXPENDITURES, AICCU INSTITUTIONS, 1966 TO 1972**

	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-1972
Enrollment							
Freshman	16,392	16,655	17,620	18,606	19,648	20,748	21,910
%	20.5	20.0	20.0	20.0	20.0	20.0	20.0
Sophomore	13,461	13,794	14,536	15,350	16,210	17,117	18,076
%	16.8	16.5	16.5	16.5	16.5	16.5	16.5
Lower Division	29,853	30,449	32,156	33,956	35,858	37,865	39,986
%	37.3	36.5	36.5	36.5	36.5	36.5	36.5
Junior	11,378	12,387	13,039	13,769	14,540	15,354	16,214
%	14.2	14.8	14.8	14.8	14.8	14.8	14.8
Senior	10,820	10,537	11,012	11,536	12,084	12,657	13,256
%	13.5	12.7	12.5	12.4	12.3	12.2	12.1
Upper Division	22,198	22,924	24,051	25,305	26,624	28,011	29,470
%	27.7	27.5	27.3	27.2	27.1	27.0	26.9
Graduate	25,234	26,201	27,751	29,398	31,241	33,197	35,276
%	31.5	31.4	31.5	31.6	31.8	32.0	32.2
Other	2,822	3,852	4,141	4,372	4,519	4,668	4,820
%	3.5	4.6	4.7	4.7	4.6	4.5	4.4
Total	80,107	83,426	88,099	93,031	98,242	103,741	109,552
Expenditures (Current $000)							
Operating	$274,729	$318,903	$365,100	$418,000	$478,600	$548,000	$627,500
Capital	83,744	88,740	78,240	87,510	95,936	105,050	114,950
Total	$358,473	$407,643	$443,340	$505,510	$574,536	$653,050	$742,450

Sources: 1965-66 and 1966-67—Enrollment: Department of Finance, **Report of Total and Full-Time Enrollments in California Institutions of Higher Education** (1966 and 1967). 1965-66 and 1966-67—Expenditure: AICCU survey of its member institutions. All data for 1967-68 to 1971-72: projected by the JCHE.

Statements of Dissent Regarding the Committee's Preliminary Findings

Statement of Senator John G. Schmitz

Statement of Assemblyman Gordon W. Duffy

Statement of Assemblyman Robert T. Monagan

Statement By Senator John G. Schmitz

I most strongly dissent from the preliminary findings of the Joint Committee on Higher Education, as transmitted in summary to the Senate and Assembly February 9, 1968.

Tuition should be charged by California's state colleges and universities. In nearly every other state in the union this is not only done, but taken for granted. In those states there is no significant opposition to the concept of tuition, though there may be disagreements over the amount to be charged. It ill behooves leaders of our progressive state to base a decision on charging tuition simply on "historic policy," to quote the language of the majority report. If "historic policy" has not worked it should be changed. The "tuition free" policy is not working because education is not "free" and its rising costs make that fact ever more clear.

Tuition should be charged for three primary reasons: (1) to relieve the taxpayers of California of a significant part of the enormous financial burden of public higher education, by transferring some of the load to those who benefit most directly from public higher education—the students; (2) to encourage a greater sense of responsibility in students by making them vividly and personally aware of the cost of their education, and to discourage attendance at state colleges and universities by students so lacking in responsibility that they cannot make constructive use of the educational opportunities offered to them; (3) to impel the state colleges and universities toward greater responsiveness to the needs and desires of *all* students—not merely the noisy minority—and their parents by having to depend on those students and parents for a greater portion of their current operating expenses.

The preliminary findings of the majority grant that the first of these three arguments for tuition is "persuasive" —though still they reject it—but dismiss the second out of hand. While recognizing that there are very broad, sincere differences of opinion on this issue, I can see no excuse for the statement in the majority report that tuition as a means of "weeding out students who lack sufficient motivation . . . cannot be justified." Of course it can be justified. As the majority report admits, "tuition-free education" is a subsidy from the taxpayer. Students not motivated to study have no rightful claim on that subsidy, and if charging tuition will help to weed them out, that is exactly what we need.

The importance of the third argument for tuition, that it would make state colleges and universities more responsive to the wishes of those actually using their facilities, is pointed up by the suggestion in the majority report that we should consider "consolidating the three public segments of higher education into a single statewide system, perhaps subdivided geographically into 3-5 regional units." Such an educational monolith would be totally unresponsive to the wishes of anyone but its own staff.

Private colleges can and should continue to offer an alternative to public institutions and a means of relieving some of the cost burden on the taxpayers. They should not be financed in any way by public funds since this inevitably would bring them under the control of the public system.

Finally, while the tuition charged to bona fide California residents should probably be kept at a fraction of the true cost of teaching each student in college, out-of-state students should be required to pay the entire cost of their education—not only a part of it as under present law. The taxpayers of California are burdened enough with taking care of our own without also subsidizing students from other states in search of an educational bargain.

Statement By Assemblyman Gordon W. Duffy

I strongly disagree with the committee's conclusion concerning the imposition of tuition for 1968-69. The reason I do so is because this finding is in complete conflict with the first finding of the committee and the facts.

The first finding is in part, "The principal purpose of any decision to impose tuition . . . must be to raise additional funds for the current support of public higher education in addition to . . . what would otherwise be available from the state's General Fund."

Consistent with this finding, the preliminary draft of the committee report contained the conclusion that, "No decision as to the immediate necessity of imposing tuition or of any alternative source of additional revenue for 1968-69 can be made until there has been a careful review of proposed state expenditures and estimated revenues for the next fiscal year."

However, when the preliminary draft was submitted to the committee for its approval, the original conclusion had been deleted and substituted with the statement that, "the Committee opposes the imposition of tuition for 1968-69 and any comparably large increase in student fees for the same purpose."

In the one month interval between the preliminary and final draft, no "careful review of proposed state expenditures and estimated revenues for the next fiscal year" had been made. In fact, the Governor's budget outlining his expenditure proposals was submitted only three days before the committee's meeting. The only thing that had changed was the composition of the committee which had given the Democrats a 6 to 4 majority.

It is interesting to note that no other changes were made in the findings so that the committee finding that "any decision to impose tuition . . . must be to raise additional funds for the current support of public higher education" still stands. Yet, without knowing what the financial requirements or resources for higher education in 1968-69 will be, the committee completely foreclosed the option of using tuition or any increase in student fees to help meet higher education's needs.

I would recommend that if sudden changes are made in committee findings, at the very least the supporting argument should be consistent. I would further recommend that the functions and role of this committee be closely examined. It appears that the objectivity of the committee is now open to serious question and that the acceptance of any of its recommendations by the Legislature and the people of California has been placed in jeopardy.

The committee has invested over $160,000 in exhaustive studies of the entire system of higher education in California. I see little reason to expend the remaining $190,000 of our appropriation on continuing our study if the result of this study is to be so lightly regarded by the members or if findings and recommendations are to be so easily changed without regard for the facts.

Statement By Assemblyman Robert T. Monagan

INTRODUCTION

California has a public higher education system unparalleled in the world. We take great pride in it. Because the future growth and development of this system depends upon adequate revenue sources, I must express my opposition to the conclusion reached by the Majority Report of the Joint Committee on Higher Education regarding student charges. This Minority Report will specifically detail how the Majority recommendation to oppose increases in student charges is not based on the facts presented to the Committee in the Committee's own staff report. It will also present an equitable student charge plan based on ability to pay, which fits those facts. There appears to be a definite prejudice in the majority report against asking the student, even the student who can afford to pay, to increase his contribution to his education.

Here are the facts in the Committee's report which do not support the Majority report conclusion that there be no increase in student charges:

1. The Committee report indicates that "state support for higher education as projected by the institutions will be 225% of that in 1966, and that General Fund revenues in 1972 will probably be around 200% of 1966 revenues, assuming no change in the tax structure." In view of this imminent crisis in higher education finance it is clear new sources of revenue must be found immediately. To reach a conclusion that the most logical sources of this needed revenue, income from the student and his family, beforeclosed, is not realistic.

2. Public investment in higher education has grown out of proportion to the private investment of the student and his family. California's investment in higher education has been a major factor in the state's economic growth. However, a crossroads has been reached in the level of support the state can legitimately ask all of the public to maintain. Because it has been shown that the present tax structure will not produce enough revenue to meet projected increases in the cost of higher education, I believe the state can legitimately look to the other main beneficiary of higher education, the student.

3. To ask the student and his family to increase their financial contribution to the education of that student is not unprecedented. Students now pay for "instructional supplies," and California residents pay tuition at certain professional schools.

4. The Committee Majority report suggests that "in order to evaluate the feasibility and desirability of tuition, or a comparable increase in other student charges, it must be weighed in terms of equity, potential yield, feasibility and acceptability against other potential sources of revenue." I suggest that asking the financially able student or his family to increase their contribution to the support of higher education meets all of the above criteria. Since both the state and student benefit from higher education the state alone should not be required to carry the full burden for increases in the support of higher education.

I propose a plan which would graduate student charges based on the income of the student and his family. I presented this plan, detailed below, to the Regents of the University of California, January 19, 1968. A preliminary report submitted to the Regents at their February 1968 meeting by their Special Committee on Student Charges and Student Aid stated it was "clear to the Committee that further study should be given to the Monagan Plan and to variations of a graduated fee system."

This plan fits the facts that have been presented to the Joint Committee on Higher Education and meets the objections raised to increases in student charges: this plan is not regressive, it does not create a barrier to higher education; instead it provides an equitable and reasonable source of additional revenue for support of higher education in California.

GRADUATED STUDENT CHARGE PLAN

The purpose of this plan is to raise revenue equitably for improved support of higher education at the University and State Colleges of California by requiring those who benefit to shoulder an increased cost burden based largely on their ability to pay. The intent of this plan is to make an estimated $25 to $30 million in added revenue available for student aid, faculty enrichment, capital outlay, educational innovation, counseling services or other uses as determined by the Regents of the University and Trustees of the State Colleges.

The ten key elements of the plan are:

1. A reasonable $30 per academic year fee increase ($10 per quarter or $15 per semester) for *all* students.

2. A fee increase above $30 per year *on a graduated basis* for California resident students whose family income is $10,000 or more. At $10,000 adjusted gross income the total fee increase would be

$55 per year and at $50,000 adjusted gross income, $630 per year (the maximum fee increase).

3. An exemption for Vietnam War combat veterans who are California residents from any graduated fee increase.

4. It places income derived from this fee increase into separate Income Funds at the University and the State Colleges so that proposed expenditures from this new revenue source, budgeted by the Regents and the Trustees, can be specifically determined.

5. There is no differential in fee increase between the University and the State Colleges.

6. Administrative costs of this plan would be negligible in relation to the revenue produced.

7. This plan largely eliminates taking money in fees from one pocket of a poor student and giving it back to him in another pocket in the form of a grant or scholarship simply to offset a significant across-the-board fee increase.

8. It does not impose an added burden on the $7,500 to $10,000 middle income group identified by the Joint Committee on Higher Education as having too high an income for special poverty grants and scholarships but too low an income to adequately finance higher education.

9. It equalizes educational opportunity by providing funds for construction of needed facilities so that "marginal students," often from low-income or minority group families, will not be "squeezed out" by too high admission standards based on lack of space.

10. It provides no graduated fee increase for self-supporting students.

THE PLAN

The plan is basically as follows:

1. All students carrying over 6 units will pay an additional $30 per academic year ($10 per quarter or $15 per semester).

2. If the adjusted gross income[1] of the student's family or those who are responsible for his support is *below* $10,000 per year the student is eligible for a *total waiver* of the graduated charge described below.

3. If the adjusted gross income of the student's family or those who are responsible for his support[2] is *above* $10,000 the student would be asked to pay an additional charge according to the following scale.[3]

ADJUSTED GROSS INCOME	GRADUATED FEE	ACROSS-THE-BOARD FEE	TOTAL FEE INCREASE
$ 0 - $10,000	$ ..	$30	$ 30
10,001 - 11,000	25	30	55
11,001 - 12,000	50	30	80
12,001 - 13,000	75	30	105
13,001 - 14,000	100	30	130
14,001 - 15,000	125	30	155
15,001 - 16,000	150	30	180
16,001 - 17,000	175	30	205
17,001 - 18,000	200	30	230
18,001 - 19,000	225	30	255
19,001 - 20,000	250	30	280
20,001 - 22,000	275	30	305
22,001 - 24,000	300	30	330
24,001 - 26,000	325	30	355
26,001 - 30,000	350	30	380
30,001 - 35,000	400	30	430
35,001 - 40,000	450	30	480
40,001 - 45,000	500	30	530
45,001 - 50,000	550	30	580
50,001 plus	600	30	630

Self-supporting students are exempted from the graduated charge.

At the undergraduate level the presumption is that the student is supported by his parents. A student is considered self-supporting if he (1) has not been claimed by his parents or persons responsible for his support as a tax deduction and he has not received financial support from them for one year prior to the beginning of the quarter or semester, (2) has not lived with parents for one year prior to the beginning of the quarter or semester (does not include time spent living away from home while going to school).

Graduate students will be considered self-supporting only if (1) they can show they contribute $2000 per academic year to their education, not derived directly or indirectly from parents and (2) parents do not claim the students as a tax deduction on either state or federal returns.

Out-of-state and foreign students are not included in the graduated charge plan since they pay a substantial tuition. Present statutory fee exemption for certain groups of students will not be changed by this plan. Further, Vietnam combat veterans who are California residents and attending the University or a State College under the Cold War G.I. Bill will be exempt from the graduated charge.

If more than one child in the family is engaged in full-time college study, the graduated charge would be reduced by dividing it by the number of such children.

ADMINISTRATION OF THE PLAN

The additional $30 per year ($10 per quarter or $15 per semester) would be payable at registration each quarter or semester and attached to the current incidental fee.

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[1] Adjusted gross income shall include (1) income from state and local government securities and (2) retirement benefits.

[2] If the student's adjusted gross income is $10,000 or more he would pay the graduated charge.

[3] The graduated charge does not apply to students carrying under 6 units. The graduated charge would be reduced on a pro rated basis for students carrying more than 6 units but less than 12 units.

For administrative simplicity the student would be required to pay the entire graduated charge at the time of registration in September.[4]

Statements of income and claims for waiver of the graduated charge would be filed with the University or College authorities by the parent or the student. All financial data will be held in strict confidence. The information reported would be checked with the Franchise Tax Board on a sample test basis.

Students with special problems such as those from separated or divorced families could be handled with minimum difficulty under this plan because the charge would simply be based on the income of the individual claiming the student as a deduction.

Administrative costs to implement this plan would be relatively negligible in relation to the income derived.

REVENUE RECEIVED

The total revenue raised by this plan is estimated at $28.5 million. The $30 across-the-board increase will raise $2.7 million at the University and $4.2 million at the State Colleges. The graduated fee increase will raise approximately $10.8 million at both the University and State Colleges.[5]

This revenue can be considered relatively "clear" since very little of it is derived from low income students or those students facing the most severe financial difficulties.

PROPOSED USE OF REVENUE

The Regents and the Trustees will budget the funds raised by this plan and this budget will be reviewed by the Legislature in the same manner as the regular support budget. The income derived from the University and State Colleges will be put into separate Income Funds, one for the University and another for the State Colleges, to keep track of the revenue and its exenditure. A primary purpose of this plan is to provide additional funds for student aid, faculty enrichment, capital outlay, educational innovations, counseling services, or other uses as determined by the Regents and Trustees.

CONCLUSION

This plan, based largely on ability to pay, meets the objections raised to significant across-the-board fee increases. Further, proposed use of revenue here meets the objectives outlined by the Special Regents Committe on Student Charges and Student Aid.

We hope that this plan will be favorably considered by the Regents and the Trustees; it raises substantial revenue in an equitable way for the support of higher education and will enhance educational opportunity for many students.

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[4] Payment of the graduated charge in this manner would significantly reduce administrative costs because it would eliminate processing all pertinent forms three times a year. For students who begin at quarters other than the fall quarter, or are part-time students, alternate arrangements can be made.

[5] Although the State College enrollment is higher, revenue from the graduated fee increase at both segments is approximately equal. This occurs because (1) a larger percentage of the State College student body is part-time and (2) the family incomes of State College students tend to be lower than those of University students.